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INDUSTRIAL DEVELOPMENT STRATEGIES AND POLICIES FOR DEVELOPING COUNTRIES*

PAPERS FROM THE HIGH-LEVEL EXPERT GROUP MEETING HELD AT LIMA IN APRIL 1983 PREPARATORY TO THE FOURTH GENERAL CONFERENCE OF UNIDO

VOLUME I

Introduction, basic and general documentation

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FOREWORD

It gives me great pleasure to be able to introduce this volume of collected papers on industrial development strategies and policies for the developing countries as presented to the High-level Expert Group Meeting Preparatory to the Fourth General Conference of UNIDO at Lima, Peru, in April 1983.

The Fourth General Conference of UNIDO (UNIDO IV) is being held at a time when the world economy is undergoing drastic changes and the developing countries are facing tremendous challenges to their industrialization. Development in the third world has virtually come to a halt, and the developing countries find themselves at cross-roads. This situation requires that previous industrial strategies and policies be assessed anew, and new approaches to resuscitating and enhancing their industrial development identified. To this end, the provisional agenda of UNIDO IV covers a number of issues pertinent to such approaches.

In preparing for UNIDO IV it is deemed essential, first, to reassert to policymakers the critical nature of the world economic situation and emerging patterns in global economic development so that an assessment can be made of the implications these bear for the industrial development prospects of the developing countries; secondly, to initiate a dialogue on the issues pertaining to a reorientation of strategies and policies for industrial development in the developing countries; and, thirdly, to evolve suggestions for policies and strategies at the national, regional, and global level conducive to augmented international industrial restructuring and to sustained industrialization in the developing countries in the 1980s and 1990s. I am confident that the papers assembled in this volume can provide an essential input to this formidable task.

I very much hope that, by publishing the rich collection of material contained in these 42 studies, UNIDO will be able to further reinforce the attempts of the Lima Preparatory Meeting to initiate a dialogue with Governments in this area that will bear fruition in the policy recommendations made at UNIDO IV. In addition, it is hoped that the papers will contribute to a purposeful and constructive debate at the forthcoming General Conference as well as strengthen the continuous endeavours of UNIDO to support the developing countries in their industrialization.

Abd-El Rahman Khane
Executive Director

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PREFACE

The High-level Expert Group Meeting Preparatory to the Fourth General Conference of UNIDO on Industrial Development Strategies and Policies for Developing Countries, jointly organized by the Government of Peru and UNIDO, was held at Lima, Peru, from 18 to 22 April 1983.

The objectives of the Meeting were to generate ideas and other inputs in the field of industrial development strategies and policies to aid in the preparation of the issue and background papers for the Fourth General Conference of UNIDO (UNIDO IV), and to initiate a dialogue with Governments in this area preparatory to UNIDO IV.

The Meeting was attended by some 50 experts from 32 countries, and 20 observers from 15 international organizations and national authorities. Documentation submitted to the Meeting consisted of 5 papers by the UNIDO secretariat and 37 prepared by the participating experts. A consensus was reached on the report of the Meeting, which was subsequently issued as document ID/WG.391/11.

The present two-volume document collects the basic papers prepared by the UNIDO secretariat and the background papers submitted by the participating experts to the Meeting. Volume I contains a foreword by the Executive Director of UNIDO and summaries of the opening and closing statements made at the Meeting by the President of the Republic of Peru, the Peruvian Minister of Industry, Tourism and Integration, the Deputy Executive Director of UNIDO and the Chairman of the UNIDO IV Task Force, as well as an introduction to the collected papers by the UNIDO secretariat. This is followed by a set of general background papers on industrial development strategies and policies for the developing countries, representing documents prepared by the secretariat for the Meeting and papers submitted by experts before the Meeting. Volume II presents background documentation prepared and submitted by experts to the Meeting on specific problems and topics in the area of strategies and policies, on the industrialization experience in specific developing countries, and on the policies of individual developed countries towards the developing countries, with only minor editing to create a uniform presentation for the collection.

It is very much hoped that the papers presented in these volumes will contribute in a positive way to the international debate and to the discussions at the Fourth General Conference of UNIDO, and thereby strengthen the efforts of the developing countries in designing strategies and policies for industrialization in the 1980s and 1990s to respond to the enormous challenges currently facing policy makers in those countries.

Summary of the statement by Mr. Fernando Belaúnde Terry, President of Peru

In his speech closing the meeting, Mr. Fernando Belaúnde Terry, the President of Peru, emphasized that industrial development in the world was taking place in a few growth poles characterized by larger market potentials and by the availability of natural resources, including energy resources. Latin America was richly endowed with resources and other natural potentials for industrial development in terms of transportation and energy. In this respect the President specifically emphasized the industrial potential of the Andean Group and of Peru. Richly endowed with minerals and with a well-established agricultural sector, Peru possessed a solid basis for industrial development. The country was thus committed to pursue its industrialization and also its full involvement in all matters pertaining to the industrial development of the third world.

The President further explained that Peru's view of industrialization was through integration at the regional level, with special emphasis on the Andean Group. Industry was a matter of markets and markets could not be atomized for they needed enormous amounts of energy. Peru, Mr. Belaunde asserted, would remain a pioneer in Latin American integration, and he called upon the industrialized countries to give their support to the development of the Amazon Basin, which he considered to be the future industrial centre of South America.

The President remarked that South America was richly endowed in energy and other resources; for example, the Amazon River carried 15 per cent of the planet's total fresh water. In the case of Peru, various studies had revealed that an electrical power of 60 million kilowatts could be obtained from the water resources of the Peruvian Amazon region; that figure meant six times the capacity of the Itaipu hydroelectric power station located between Paraguay and Brazil. The President added that South America would have its way open to intense multilateral trading if it exploited its raw material resources and processed them in the region. He then called for further co-operation from the developed countries in favour of South America and the third world in general.

Summary of the statement by Mr. Farlan Carré, Deputy Executive Director of UNIDO

In opening the meeting, Mr. Farlan Carré, the Deputy Executive Director of UNIDO, took the opportunity to express the appreciation of UNIDO for the attendance of all participants and thanked the Government of Peru for the facilities they so generously provided. He reminded his audience of the importance of Lima, not just for UNIDO, but for a most important development aspiration of the international community, since it was there, eight years ago, that the Second General Conference of UNIDO had adopted the Lima Declaration and Plan of Action.

It was regrettable to have to say, however, that progress towards the goals espoused at Lima in 1975 had been slow. And current international economic difficulties had not only brought the long-term development plans of developing countries into question, but also, in some cases, entailed a severe disruption of their economic systems.

The Deputy Executive Director then argued that the present difficulties - which had their roots in the existing structure of the world economy as a whole - had also provided an opportunity for the reconsideration of national policies and international economic relations. It was his belief that the industrialization of the developing countries could constitute a major component of such a strategy for the world economy, and his hope that the Fourth General Conference of UNIDO, to be held in the summer of 1984, could form part of the process by which international action would return the world economy to a more dynamic and efficient course.

The Deputy Executive Director concluded by stressing that the resolution of the problems currently facing the developing countries represented a complex task but one which would be made much easier if a genuine climate of international co-operation became a full reality. The Meeting must therefore be regarded as of prime importance since, by assessing the nature and current role of industrialization policies, and by identifying new areas for action, particularly in the field of international co-operation, the deliberations could provide valuable overall guidance in the preparations for UNIDO IV.

Summary of the statement by Dr. Gonzalo de la Puente, Peruvian Minister for Industry, Tourism and Integration

Dr. Gonzalo de la Puente, the Peruvian Minister for Industry, Tourism and Integration, extended his heartiest welcome to the city of Lima, and reminded the participants that, eight years ago, in March 1975, his country had had the privilege to be the venue of the Second General Conference of UNIDO, in which far-reaching agreements had been reached for the industrial development of developing countries, agreements contained in the Lima Declaration and Plan of Action. The Minister then delved into some thoughts on the industrialization process in the developing world, and in his country in particular.

A basic premise for industrial development, which should be clearly established, was the difficulty of reaching that goal with a small market such as that of Peru. A healthy industrialization therefore required the support of foreign trade, and ran, out of necessity, parallel with access to larger markets, which consequently called for the abandoning of protectionist measures, especially by the developed countries.

Dr. del la Puente reminded the participants that in 1982 the national parliament had passed the Law of Industries, in which the industrial future of Peru was outlined. In that law, contrary to the former one, priorities for industries were not set according to types of products but depended on the size and geographical location of the industries, with higher tax incentives given to the small-scale industries and to the industries located in the most backward areas of the country. Under the new law, the State's exclusive role disappeared and more freedom was given to the private sector. It was to be hoped that the abolition of differential treatment of certain industrial branches and the higher external competitiveness due to appropriate import tariffs, would in the future enable the Peruvian industry to develop more efficiently.

But there were still great challenges ahead, and to overcome them required that the developing countries acted on a more united basis. The Minister stressed that those countries would have to widen and deepen their co-operation, intensify economic integration agreements, and, like Peru, give special attention to economic co-operation among developing countries. That constituted an essential element for the establishment of a new international economic order, that was a complement to, and not a substitution for, co-operation between North and South.

Summary of the statement by the Chairman, UNIDO IV Task Force

The Chairman of the UNIDO IV Task Force opened his address by thanking the Minister of Industry, Tourism and Integration, and through him the Government of Peru, for so warmly hosting the meeting. He then recalled that the Fourth General Conference of UNIDO was to be held in the summer of 1984, and that the Conference would take place not so much under the "glow of world growth" as in Lima some eight years before, but under the "shadow of recession". That recession had destroyed liberalism, strangled the monetary system and stifled trade as the engine of growth. It had also created new attitudes. UNIDO IV, then, must look not so much at the causes that brought about the changes as at how to respond to the changes - at the national, regional and international levels. It would therefore be an occasion to initiate a dialogue that would be continued in subsequent forums.

In order to start the dialogue and at the same time to prepare a sound basis for all to reflect, respond and readjust, the Chairman stressed that an effort had been made to look at the situation in its component parts, to single out its critical elements. Those could be seen to be human resource development, technology, energy, industrialization strategies and policies, and industrial co-operation among developing countries. He stressed that all of those were - with the exception of strategies and policies - specific agenda items at UNIDO IV, and all of them were the subjects of the High-Level Expert Group Meeting Preparatory to the Fourth General Conference of UNIDO.

The Chairman emphasized that the topics were clearly all interrelated, each building on the other. As an example of that interlinkage he recalled the preparatory meeting on technology which had been held a week before at Tbilisi. That meeting had stressed the importance of the impact on the developing countries of new technologies such as micro-electronics, genetic engineering and biotechnology, and energy technologies, but had also strongly emphasized the need to harmonize industrial and technological policies. Thus strategies and policies for industrial development remained the core of the thinking in preparation for UNIDO IV and the basis for visions of the future. It was in that context that he hoped that the Meeting could generate new impulses for the industrialization of the developing countries.

INTRODUCTION

The High-level Expert Group Meeting Preparatory to the Fourth General Conference of UNIDO that was concerned with industrial development strategies and policies for developing countries aimed at establishing a dialogue with experts in that key area of greatest concern to policy-makers and directly related to almost every item on the agenda of UNIVO IV. The Meeting addressed itself to the following questions:

(a) What lessons for the future could be drawn from the experience of strategies and policies and from the pattern of industry established in the last decade in the developing countries?

(b) What strategy options emerge for industrial development in the third world in the 1980s and 1990s in light of the current crisis and changing global conditions?

(c) What new possible approaches could be conceived at the international level to support national endeavours by the developing countries and to respond to emerging challenges?

It was felt that by raising those key questions and initiating an in-depth discussion along those lines, the Meeting fulfilled an important task. In the sessions of the Meeting a number of essential observations and recommendations were made which will undoubtedly be complemented and sustantiated in the further preparatory work for, and in the actual debate at, UNIDO IV. In this respect, the recommendations made by the working groups on policy and strategy issues relating to developing countries with potential for increased export of manufactures, for developing countries with potential for domestic market-oriented industrialization, and for developing countries in the initial stages of industrialization could be particularly valuable. From these discussions it was evident that prevailing external forces and lessons drawn from past experience call for a reassessment of past, and a search for new, approaches for industrial strategies and policies for the 1980s and 1990s by developing countries.

From the deliberations a number of essential messages can be singled out.

First, the increased economic interdependence, the far-reaching internationalization of industrial production arising from developments in the past decades, and the international operations of large and powerful transnational entities have narrowed the options for individual developing countries in their choice of industrial development strategies and policies. Currently, the international economic crisis is hampering industrial growth for the developing countries and directly influencing their strategy decisions.

Secondly, most developing countries seem to have relied extensively on external growth prospects, to the relative neglect of internal potentials and requirements. New tensions in the international trading system are prompting an increasing attention to potential internal-growth dynamics, while at the same time severe balance-of-payments problems dictate that exports of manufactures be promoted. A new approach for pursuing both external and internal market-orientation is therefore required.

Thirdly, most developing countries are currently facing increasingly serious external financial problems - including higher borrowing costs with lower maturities and the transfer of exchange risk and interest rate fluctuations to them, together with an extraordinary heavy debt service burden and dwindling development assistance. These constraints require the introduction of new policies and strategies, including the use of new forms of international industrial co-operation so as to enable the resumption of industrial growth.

Fourthly, it is becoming increasingly clear that the developing countries face growing constraints in terms of the access to external markets, compounded by growing difficulties in obtaining the required imports from developed countries. For this reason, regional and interregional co-operation and joint action by the developing countries to allow them to capitalize on their complementarities in factors of production, industrial production and trade are a necessary response by the developing countries at the international level if they are to overcome some of the short-term and long-term difficulties they face at the national level.

Fifthly, rapid advancement in technology evolution is of the highest priority for developing countries wishing to become internationally competitive in a wide variety of manufactured products. When conceiving technology policy it is crucial to ensure that product and process flexibility be built into the production structure and to realize that technological advances bring with them socio-economic impacts that must be duly allowed for in the process of policy and strategy formulation.

Finally, the current crisis has revealed the vulnerability of established production structures in developing countries and the need for greater efficiency in the management of resources, operation of industrial plants and planning of new investments. It has also demonstrated the need to harness human-resource development to help solve the problem of unemployment in the developing countries that threatens their growth and stability.

Against this background, and on the basis of the discussions, a number of observations can be made. Given the external pressures on the developing countries, a global move towards economic recovery, the resolution of international financial problems, and a halt in protectionism of developed countries are fundamental issues to be attended to by the international community. Without an international economic environment conducive to continued industrial development of the third world, no national strategies and policies can overcome the prevailing problems.

At the level of national measures, it can be concluded that there is obviously no one strategy applicable to all - or even many - developing countries. Rather, the specific conditions, resources, and prospects of individual countries are decisive for the choice of the particular approach. It is also evident that in the future a developing country cannot confine itself to a homogeneous industrial strategy. Rather, the strategy must reflect a complex pattern of short- and long-term considerations and be a mix of a number of different development priorities.

The complex of industrial strategies and policies being perceived by national policy-makers in the third world for the 1980s and 1990s are characterized by multifaceted approaches. These aim at:

(a) Establishing a socially and economically viable industrial base and structure of production;

(b) Adjusting previously established production capacities and structures to the new demands of the current and emerging international environment;

(c) Increasing economic co-operation with other developing countries, on the principle that particularly for small developing countries co-operation is imperative;

(d) Designing an industrial policy for those countries facing an acute financial constraint that reduces the propensity to import while enhancing external liquidity to the extent possible;

(e) Creating flexible production systems better able to be adapted to changing external conditions;

(f) Introducing a fundamentally long-term approach to industrialization that emphasizes the role of transferred high, adapted, upgraded traditional and newly generated indigenous technology;

(g) Allocating a greater priority than heretofore to investments in human resources.

To this end, industrial strategies are being conceived which can no longer be categorized in the traditional manner (e.g., export-orientation, import-substitution). Instead they will encompass for instance both low and high technology, both domestic and foreign inputs, both external and internal market orientation, both North-South and South-South trade and financial co-operation and assistance, and both industrial and agricultural priorities.

Whereas these strategies may be characterized as overall integrated approaches, it seems likely that they will be applied differently, leading possibly to the emergence of two kinds of industrial activities: that is oriented more towards employment, the domestic market and domestic input, and a modern, high-technology segment that is internationally oriented. A fundamental consideration in formulating these strategies is the creation of a harmonious co-existence and interaction in a reinforcing and dynamic relationship between these two segments both in terms of international trade and financial relations and national development policies.

It was against the background of such an increasing complexity of national, regional, and global industrial strategies and policies and the rapidly changing international conditions that the Meeting called for:

(a) An expanded role for the international community in supporting the industrial development aspirations of the developing countries;

(b) Augmented international industrial co-operation - both North-South and South-South - to supplement and support individual national strategies and policies;

(c) Greater transparency of national policies for development and adjustment in both developed and developing countries;

(d) Increased activity by UNIDO in examining the prospects and features of global economic and industrial co-operation designed to accelerate industrialization in the developing countries;

(e) Greater participation by UNIDO in the surveillance and conception of industrial development strategies and policies at the global, regional, and national level for the developing countries.

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HIGH-LEVEL EXPERT GROUP MEETINGS PREPARATORY TO THE FOURTH GENERAL CONFERENCE OF UNIDO

Basic Documentation

Industrial Development Strategies and Policies for Developing Countries

Lima, Peru, 18–22 April 1983

INDUSTRIAL STRATEGIES AND POLICIES OF THE DEVELOPING COUNTRIES IN THE EIGHTIES: SOME ISSUES FOR CONSIDERATION

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INDUSTRIAL STRATEGIES AND POLICIES OF THE DEVELOPING COUNTRIES IN THE EIGHTIES: SOME ISSUES FOR CONSIDERATION

1. There is an apparent paradox, verging on absurdity, in the international economic system today. Most industrialized countries, in the grip of an economic recession, are unable to find adequate markets for their manufactured products; most developing countries, on the other hand, are unable to finance their industrialization process due to lack of adequate purchasing power. In the world economic system today, a high degree of unutilized productive capacity and unemployment coexists in the North with unfulfilled demand for industrial goods in the South. This, in essence, is the sad paradox of the current situation.

2. There are different perspectives - historical as well as analytical - from which one may try to explain how this absurd situation has come into existence, resulting in the most serious economic recession facing the world since the Second World War. The economic recession, in turn, is further aggravated by the threat of a massive financial crisis, the origin of which lies in the so-called "recycling operations" conducted by international private banks during the 1970s. Their lending on an unprecedented scale to a few newly industrializing, middle income developing countries in the South resulted in a situation where some of the major borrowers are now in a state of manifest insolvency to service their outstanding debt. The banks, on the other hand, are forced to lend, reschedule and roll debt to avoid a "crisis of confidence" in the international financial markets that might result from technical default by one or two major borrowing countries. The world-wide economic recession, therefore, has been vastly accentuated by uncertainties of an impending financial crisis.

3. It is against this bleak background of the international economic situation, that individual developing countries have to formulate their industrial strategies and policies at a national level for the 1980s. Naturally, longer-term economic strategies are formulated and shorter-term policies are made in terms of perceptions of problems and constraints by individual countries. The individual perceptions are bound to differ among developing countries depending on their specific historical situations and experiences. And yet, there are some common elements that must be

taken into consideration by each individual developing country, although the relative weights which a country assigns to those common elements must vary depending on its particular situation. In this context, the formulation of a longer-term economic and industrial strategy is also a dynamic concept: each country has to identify the immediate and most pressing problems facing it and by overcoming them, it can also hope to relax other constraints that will be more pressing at a future date. In essence, strategic economic thinking then consists of (a) identifying the problems and constraints facing a country; (b) assigning relative importance to these problems and constraints; and (c) formulating policies in a sequential manner over time to overcome these problems gradually to the best of its ability.

4. With this view of national economic strategy and policy formulation, it is analytically convenient to start by distinguishing between problems and constraints that are external to a developing country, arising from its international environment over which it has little control and problems and constraints that are more internal in nature, arising from the domestic economic structure over which, in principle at least, the country has more control. It hardly needs emphasizing that this distinction is only a matter of analytical and expository convenience and may not hold in the ultimate analysis.

5. At the level of external problems and constraints, a most significant change has taken place during the 1970s. The international capital markets have become increasingly "privatized" in the sense that private sources of credit have increasingly become more important than public sources. The so-called international debt crisis and the vulnerability of private banks with heavy foreign exposure are largely a reflection of this phenomenon. Thus, during the period 1976-1981, total debt of developing countries grew at 20 per cent per year, while private debt grew by 25 per cent and short-maturing private debt at the phenomenal rate of almost 30 per cent. In 1967, only about 33 per cent of developing countries debt was from private sources, while that share steadily grew to over 60 per cent by early 1980s. Of the total outstanding debt of 630 billion dollars in 1981, about 490 billion was long- and medium-term debt, out of which private banks accounted for slightly over one-third; but, of the remaining short-maturing debt of 140 billion (of less than one year maturity), over 90 per cent was owed to commercial banks.

6. The implications of this systematic process of privatization of world capital markets for the formulation of development strategies and policies needs to be fully comprehended. It has meant (a) higher borrowing cost with lower maturity; (b) transfer of risk of exchange and interest rate fluctuations to the borrowing developing countries, particularly due to the flexible interest loan arrangements widely practised by commercial banks during the late 1970s and early 1980s; (c) an extraordinarily heavy debt service burden, which in effect is steadily reducing the net flow of foreign private loan to developing countries which came down from nearly 6 billion dollars in the first quarter of 1981 to 3 billion dollars in the same quarter in 1982 and only to 0.3 billion dollars in the first quarter of 1983, for private banks reporting to the Bank of International Settlement; and (d) finally, it has also meant heavy discrimination among developing countries, where the poorer ones among them have simply not been considered sufficiently creditworthy by private banks, leaving them largely out from access to private credit. The first issue that arises for the development strategy is how to finance the "foreign exchange" component of existing productive capacity as well as setting up of new industries in developing countries under these circumstances of systematic privatization of world capital markets. It not only emphasizes the need for multilateral lending/financial assistance to developing countries on an official basis, but more fundamentally requires them to press for new forms of international payments arrangements (e.g., in local currencies and 'clearing house' arrangements) which will at least partly relax this vicious grip of the so-called "foreign exchange constraint" on their development strategies. It needs emphasis that all signs indicate that during the 1980s commercial banks will be far more cautious regarding foreign exposure in developing countries, while net flow will dwindle simultaneously on account of debt servicing. The urgency of this issue therefore cannot be overemphasized for strategic economic thinking in developing countries during the 1980s.

7. It has to be recognized, nevertheless, that the impact of an acutely constraining foreign exchange position can be very different on different groups of developing countries. Because, that impact would largely be transmitted through the nature of vulnerability and dependence of developing countries of the South to their external economic environment. To illustrate this point, one could classify developing country/countries groups according

to the nature of their external dependence and degree of vulnerability, e.g.

(a) Groups of countries with heavy concentration of export earnings from a few primary products and mineral resources whose international prices are subject to wide fluctuations. The terms of trade rapidly moves against these countries (e.g., price of sugar dropped by 78 per cent, copper by 35 per cent and rubber by 37 per cent only in the single year of 1981) to leave their longer-term development strategies more or less at the mercy of movements in terms of trade.

(b) Groups of countries without self-sufficiency in food production where worsening of foreign exchange position often implies starvation. Frequently, these are small islands and land-locked countries whose communication and transport network also depend on their ability to pay for the international "trade and transport margin" in terms of foreign exchange on an emergency basis.

(c) Countries with a reasonably large domestic industrial base, whose ability to maintain a satisfactory degree of capacity utilization depends on adequate foreign exchange for maintenance imports. A worsening of the foreign exchange position not only means a slower pace of industrialization in these countries, but it inflicts heavy and disproportionately large damage on them through sharp drops in the degree of utilization of installed capacities; and finally

(d) Countries with reliance on exports of manufactures (a sub-group of the so-called newly industrialized countries) who depend mostly on the North to sell their products, obtain commercial loans and obtain industrial technologies. In many instances, they obtain both such industrial technology and commercial loans through multinational companies with branches located in these countries. The large transnational banks lend to the multinational companies through public or privately guaranteed credit arrangements. Any shrinking of the international commercial market for loans will make export-based strategies of industrialization highly problematic on the supply side in these countries, while on the demand side they increasingly face the problem of lack of markets.

8. The above four-fold classification of country groups is neither meant to be exhaustive nor exclusive; indeed, there would be a considerable degree

of overlap among country groups in terms of the nature of their external vulnerability. However, the discussion suffices to point to a second issue for the formulation of development strategies and policies during the 1980s: it relates to each developing country recognizing the primary nature of its external dependence and degree of vulnerability on that count in formulating strategies and policies for development during the 1980s.

9. In many instances, it would appear that the extent of flexibility in formulating national development strategies during the 1980s is severely limited by the constricting nature of external dependence. With such limited options available, it would be natural to look for new options that may become available through greater co-operation, co-ordination and group action. It is here that individual developing countries may find it worth their while to consider strategies and policies, set in the wider context of co-operation in trade, investment and finance among nations or groups of nations. The theoretical possibilities here are many ranging from traditional possibilities of customs union and joint ventures in investment to less explored arrangements. There are, however, two less explored possibilities that seem quite compelling. It will not only tend to relax the balance of payments constraint on formulation of national strategies to some extent, but will also create a greater degree of reciprocal demand through trade bilateralism. At a time when the world market for exports is shrinking and the prospects for foreign aid/finance on commercial terms are bleak, local currency payment, at least on a partial basis, provides a new institutional arrangement to break out of the vicious circle. One also needs to be reminded that this is not an impossible task - the "Committee on Payments Agreement" (in Paris, September 1947) among war-devasted economies of Western Europe provides a historical precedence for developing countries in the South. A second option is to co-operate in the field of international trade and investment with particular reference to trade and transport. The "trade and transport margin" in international price formation - including such items as shipping and insurance charge - has been one of the most important factors tilting the terms of trade against most Southern countries. It is a natural sphere where co-operation among Southern countries could improve their collective balance of payments position without making any individual member worse off.

10. Although these particular suggestions may or may not find acceptance, the significant underlying issue must be considered in the present international economic context. This third issue relates to the role which individual developing countries would like to assign to group action/international co-operation in formulating their development strategies during the 1980s. It is to be clearly understood that such co-operation must arise from recognized needs by the individual countries concerned; consequently, it will not clash with economic sovereignty and self-interest of nations. Instead, such international co-operation or more limited group action on the basis of South-South co-operation will strengthen national economic interest by reducing the degree of vulnerability arising from external dependence from which many developing countries suffer today. Imaginative economic co-operation would be only another name for increasing their range of options in formulating national development strategies.

11. Although the degree of external dependence could make national development strategies highly vulnerable to the external economic environment, in many instances, there also exist internal constraints and problems in terms of which such strategies have to be formulated. At the cost of oversimplification one could identify two broad areas here - the past history of evolution of the domestic economy structure and the nature of the domestic market. It is well known that the domestic production structure often has serious imbalances and distortions, inherited from past history. Many developing countries of the South bear even today unmistakable marks of a colonial past in terms of their economic administration, nature of trade and financial relations, information and communication network, etc. Their problem has often been compounded by an inefficient industrial structure. It often shows itself in terms of high cost domestic industries needing protection, poorly managed infrastructure of economic and social overheads essential for industrialization, relative price structure that can be neither justified on grounds of allocative efficiency nor on grounds of income distribution, etc. It is not the purpose here to try to list the variety and range of problems that individual developing countries accumulate in the course of the evolution of their industrial structures. The central issue here is to recognize these problems explicitly in relation to the formulation of strategies. Perhaps one broad way to capture some of these problems is to examine the implications of these various inefficiencies and distortions of

the domestic industrial structure in terms of the strain it generates on public finance in general and government budget in particular. The fourth issue therefore is to ascertain how much of a national development strategy can be domestically financed - both in terms of money and in terms of availability of domestic resources and in this way, to come to a clearer formulation of both the scope and the limits of instruments of public finance available with the government in the context of formulating strategies. It should perhaps be emphasized here that this fourth issue of assigning a clear role to fiscal and monetary policy in the formulation of development strategies is often missed in practice. The longer-term or perspective plan in some developing countries are typically based upon material balances or input-output analysis in some degree of detail, but the supporting financial plan of how to achieve these physical balances are often far less clearly spelled out. The latter is managed on a more ad hoc basis of government annual budgeting which does not always fit in with the longer term or perspective plan. This issue of understanding more clearly both the limits and the possibilities of the domestic fiscal and the monetary system in relation to the national development strategy is therefore also essential for a better integration between the material (or physical) aspects of national planning with its financial aspects, particularly in developing mixed economies.

12. If the domestic production structure of most developing countries suffer today from serious imbalances and distortions in many instances their domestic consumption structure is at least equally distorted and imbalanced. The domestic consumption structure reflects the pattern of demand generated by the distribution of income inside the country. Both the size of the domestic market and the pattern of demand it generates needs to be broadly balanced with the domestic production structure, adjusted for international trade. This presents another central issue - the role to be assigned to the domestic market in the formulation of development strategies. At a more aggregate level, conventional characterizations like export promotion versus import substitution strategy essentially indicate the varying importance of the domestic market in the two respective stereotypes of strategies. But, it is not always explicitly recognized that particularly for many types of industrial products in developing countries, the size of the market for a

product is crucially influenced by the nature of domestic income distribution. It also bears emphasis here that income distribution is a multidimensional concept - it involves personal distribution of income, distribution of income by occupation and region and, in many developing countries, it also has a crucial dimension in terms of the distribution of income between the town and the countryside. The fifth issue of assigning a clear role to the domestic market in formulating development strategies therefore has to involve explicit considerations on the role of domestic income distribution in its various dimensions on the development strategy. Since both the limits and the possibilities of fiscal policies are closely related to such income distribution considerations, the preceding issue (see the fourth issue) and the present issue of the role of the domestic market in a development strategy tend to merge here.

13. The domestic market however also has certain given dimensions in terms of the size of a country. On the supply side, the breadth of natural resource base and skill formation of a country tends to have some relation to its size. On the demand side, the size of a country tends to affect the size of the domestic market. Developing countries with relatively small population (the majority of developing countries have a population size of less than 5 million) will tend to have rather limited domestic market at low levels of per capita income, in many cases their small size also entails a rather narrow natural resource base and limited skill formation. The size of a country, defined in a broad manner, thus must exert some influence on both the size of the domestic market and on the domestic supply possibilities. It is probably true that conventional economic theory has somewhat exaggerated the importance of "economies of scale" in industrial production. Nevertheless, constraints of country-size on the development-strategy, of which the size of the domestic market or narrow resource base often appears as particular manifestations, needs to be emphasized in formulating national development strategies. It is also worth considering here what role can be assigned to the service or tertiary sector, which typically has less pronounced effects on economies of scale. An explicit recognition of the importance of enormous differences in country-size and their implications for formulating national development plans at least serves as an antidote to the vice of overgeneralization in formulating national development strategies. Perceptions of problems have to be highly

country-specific by its very nature and a development strategy must therefore be formulated at the national level. It is only when perceptions by various nations of their individual problems begin to show the common elements, the need for group action without sacrifice of national self-interest begins to become a historical compulsion. And despite the diversity in perception of problems and the varying nature of their external dependence and vulnerability that developing countries are perhaps feeling today historical compulsions of co-operation. It is the duty of strategic economic thinking at national levels not to be oblivious to such historic compulsions.

Summary:

14. In formulating strategies and policies for development, developing countries usually have to face a set of related issues. Five such major issues have been identified in this paper, namely:

External Issues:

(i) The increased importance of private sources of international credit and its implications for formulating development strategies during the 1980s.

(ii) The nature and extent of dependence/vulnerability of individual developing countries to changes in the external economic environment and its role in strategic economic thinking.

(iii) The role of collective action - by special country-groups, on the basis of South-South co-operation or on an even wider scale - in formulating national development strategies.

Internal Issues:

(iv) The limits and possibilities of the domestic monetary and financial system in relation to national development strategies. This also implies closer examination of the extent of integration achieved between material/physical and financial plan at the national level.

(v) The role to be assigned to the domestic market - as influenced by per capita income, distribution of income and the size of the country - in formulating national strategies.

15. It needs emphasis that the above is not intended to be an exhaustive list; there are many more factors which each individual developing country has to reckon with in formulating its national strategy. Nevertheless, they illustrate some of the most relevant and typical common elements that need to be considered. A development strategy also involves attaching relative weights/significance to these various elements and sequencing them over time. Thus, one particular issue may be perceived as the most relevant at a point of time by an individual country and only the resolution of that immediately pressing problem allows the country concerned to then move on to other sets of issues. From this point of view, strategic economic thinking is essentially dynamic: it is not only influenced by historical experience continuously, but must also sequence issues in order of priority over time.

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Industrial Development Strategies and Policies
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INDUSTRIALIZATION STRATEGIES AND POLICIES: POSSIBLE OPTIONS FOR DEVELOPING COUNTRIES

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Draft Provisional Agenda

INTRODUCTION

UNIDO IV and the issue of industrial strategies and policies

1. The Fourth General Conference of UNIDO (UNIDO IV) will be held at a time when the world economy is undergoing drastic changes and the developing countries are facing tremendous challenges to their industrialization. Development in the third world has come to a virtual halt, and the developing countries find themselves at a crossroads. This situation requires that previous industrial strategies and policies be assessed anew, and new approaches to resuscitating and enhancing their industrial development identified. To this end, the provisional agenda of UNIDO IV covers a number of issues pertinent to such approaches. (See Annex 1)

2. Under item 4 on the UNIDO IV agenda, a review is to be made of progress towards and constraints on industrial development in the third world in the 1970s and an outline given of the perspectives for the achievement of the Lima target, while item 5 will cover international and national actions in critical areas of industrial development over the period 1985-2000. The critical areas specifically referred to are human resources, technology, finance, and energy, as well as such issues as industrial restructuring and redeployment and food supplies.

3. It was considered essential to the preparations for UNIDO IV that policy makers and specialists from as many developing and developed countries as possible analyse jointly with the UNIDO Secretariat these critical areas and present their views of future developments and the actions required. To this end, five preparatory expert group meetings are being organized. Four meetings will be on specific areas covered by the provisional agenda for UNIDO IV (technology, energy, economic co-operation among developing countries, and human resources), while the fifth will be devoted to industrial strategies and policies for developing countries: the broad issue that runs across all agenda items and is likely to constitute the leading theme at UNIDO IV.

4. In preparing for UNIDO IV it is deemed essential, first, to re-assert to policy makers the critical nature of the world economic situation and emerging patterns in global economic development so that an assessment can be made of the implications these bear for the industrial development prospects of the developing countries; secondly, to initiate a dialogue on

the issues pertaining to a reorientation of strategies and policies for industrial development in the developing countries; and, thirdly, to evolve suggestions for policies and strategies at the national, regional, and global level conducive to augmented international industrial restructuring and to sustained industrialization in the developing countries in the 1980s and 1990s.

5. The meeting on industrial development strategies and policies is designed to provide a major input to these endeavours. As can be seen from the provisional agenda for this meeting (see Annex 2), the approach chosen is to combine broad analyses in a plenary sessions with the more specific analyses conducted in working groups. Plenary will devote itself to a broad assessment of developments in the 1970s, of the current crisis, and of the prospects and strategy options for the 1980s and 1990s. While the working groups will enter into the specific issues peculiar to developing countries faced with different industrialization options in the formulation of their strategies and policies for industrial development.

6. The meeting will attempt to synthesize the perceptions of international and national developments and indicate new concepts and approaches in strategy and policy formulation by the developing countries, acting both individually and collectively. This will be done in terms of the key agenda item of UNIDO IV on "International co-operation, relevant national actions including industrial policies, and UNIDO's contribution in critical areas of industrial development 1985-2000."

7. The preparatory meeting represents an important step in providing UNIDO IV with a set of observations on current and probable future developments in the industrial sphere and their driving forces - in both the North and South, as well as globally, regionally, and nationally. It will also provide a preliminary set of proposals related to appropriate and necessary policy and strategy responses by the developing countries at those levels. As a result of these deliberations, the meeting may also propose the further elaboration of key issues for presentation to UNIDO IV.

THE RECENT PAST, THE CURRENT CRISIS, AND FUTURE POLICY AND STRATEGY OPTIONS

The recent past

8. Up until the end of the 1970s, the industrialization of most developing countries proceeded at a relatively rapid pace: an advancement that was reinforced and supported by the international trade and financial system.

9. The end of the 1970s marked the beginning of an ever-deepening world economic recession, the impact of which was particularly felt in those countries least able to respond - the developing countries. This slowdown in overall economic growth was more pervasive than ever before in the post-World War II period, and as the process of world industrial development came almost to a standstill, the frailty of established industrial structures was revealed.

10. In order to understand the present situation it is necessary to examine the forces that evolved during the mid- and late-1970s and led to a vicious circle of international contraction. The international economy was in a state of turmoil owing to the all-pervasive uncertainties resulting from the volatility of exchange and interest rates, as well as the prices of primary commodities, oil and food. The fundamental changes in the international economy as against the previous decades were not clearly perceived by economic policy makers. The need for profound structural change and restructuring in industry was generally met by the adoption of short-term economic adjustment policies at the domestic level. Little consideration was given to the international or long-term implications of such policies - both of which were of paramount importance to the developing countries.

11. In the recession of the mid-1970s, despite the contraction of the developed countries, a small group of developing countries maintained the momentum of their industrialization by virtue of their access to international capital markets. However, for many developing countries - and particularly the poorer countries - no such opportunities existed. During this period the reality of inflation - and the monetary policy-based response - in the developed market economies was not yet fully manifest and thus government economic policies did not centre on combating inflation. Moreover, attitudes and policies towards aid and international co-operation were still open,and a trend towards increased protectionism was not apparent.

12. The persistent inflation, growing unemployment and prolonged recession that marked the beginning of the 1980s gave rise in some developed countries to varying deflationary domestic monetary and fiscal policies and restrictive foreign economic policies. These policies combined to have a deflationary impact on the world economy. This negative effect on the economies of the developing countries was heightened by increased international interdependence and the integration of national economies into the international economy that had come about as the result of development patterns prevailing in the previous decades.

13. The vulnerability of developing country industries led to general uncertainty in all areas of economic activity, with a resultant drop in capital formation. It also complicated to a significant degree the task of those concerned with the formulation of policies and strategies for economic and industrial development in those countries. This was particularly true in the case of project planning, where the determination of project viability became very difficult in the face of fluctuating exchange and interest rates. The difficulty of this task should be viewed in relation to the dependence of the developing countries on the developed countries, a factor which restricted their freedom of choice in the design of appropriate policies.

14. The marked deterioration in the terms of trade of the majority of developing countries had a significant negative impact on the availability of financial resources, thus limiting the scope for expansion in the elaboration of industrial development policies and strategies. Expansion was also limited by the need to introduce short-term adjustment policies.

15. This situation was aggravated by the significant indebtedness of the developing countries. The recycling of petrodollars, which had delayed the impact of certain recessionary trends in some developing countries, resulted in a significant debt-servicing burden at an inordinately high cost to both the international financial system and the medium-term development process of numerous developing countries.

15. The above notwithstanding, it should be recognized that part of the responsibility for the impact of the present crisis lay with the structures

prevailing in the developing countries. A number of developing countries could have developed, by means of appropriate policies, structures that were less vulnerable to external pressures and more responsive to internal dynamics, thus ensuring a wider distribution of the benefits of development and more sustained industro-economic growth. The least developed countries, however, were in no such position, and they continue to depend upon external assistance and support. Furthermore, whereas some developing countries - either individually or through membership of producers' associations, regional free trade areas and customs unions - have accrued certain benefits, they have not been able to ensure the distribtuion thereof to poorer nations. Redistribution of the benefits of development among the developing countries calls for effective inter- and intra-regional cooperation in trade and finance.

The current crisis

16. The current crisis has demonstrated in almost all developing countries the vulnerability to external change of the structure and organization of industrial production which were based on policies and strategies drawn up under different conditions. Furthermore, these policies and strategies did not incorporate an explicit recognition of the implications of global interdependence.

17. The current crisis also demonstrates the need for national strategies and policies that take due account of long-term and global development. Moreover, the far-reaching integration of the majority of national economies into the world economy calls for joint approaches and the co-ordination of policies of all countries, developed and developing alike.

18. The recession brought about a sharp drop in import demand by developed countries and a collapse in primary product prices. It gave rise to strong pressure in the developed countries to turn their attention inwards to domestic economic problems and away from the problems confronting the developing countries. It also meant turning away from restructuring their industry in accordance with the changing international pattern of comparative advantages. This redirection of policy led to the adoption of a money and credit policy in the leading developed countries that bore severe consequences for those developing countries that had chosen to rely heavily on foreign credits in their industrialization endeavours.

19. Given the absence of a secondary market for loans to developing countries, the international banks had no choice but to lend more money to service existing loans, when their developing country clients met with difficulties. Whereas these loans helped maintain the momentum of industrialization in the developing countries in the 1970s, this is no longer a viable option for either the banks or their clients.

20. The recent tendency in leading capital markets for interest rates to fall could be of major benefit to all developing countries, just as the current fall in world oil prices could benefit developing countries that import oil. However, neither the long-term direction nor the intensity of either trend is clear: a factor which greatly exacerbates the process of long-term policy and strategy formulation.

21. At the same time, the developing countries seem to have underestimated the long-term cost of externally-financed industrialization. Their development planners failed to make allowances for risk and uncertainty in the international goods and capital markets.

22. The collapse in commodity prices at the outset of 1980 aggravated the serious deterioration in the current account position that had been facing non-oil developing countries since the late 1970s. These developments lend emphasis to the need for structural change in the nature of material inputs, the pattern of capital investment, and the structure of output.

23. This break in the industrialization process of the developing countries is generating enormous social pressure and uncertainty as to the appropriate pattern of long-term policy and strategy response in many countries.

Future policy and strategy options

24. At this juncture two fundamental questions arise: the first relates to the optimal routes for international recovery, the second to the short-term industrial policy and long-term industrial strategy options most appropriate to the industrial growth of the developing countries over the next two decades. This paper can only raise certain key issues relevant to the process of strategy and policy formulation for industrial development in the coming years.

It is expected that in the preparations for the Fourth General Conference of UNIDO these issues will be subject to analysis by policy makers in developed and developing countries and that some convergence of views in terms of national, regional and international action may emerge.

25. The first issue relates to the need to demonstrate that the present world economic environment is not conducive to meeting the pressing requirements of the developing countries, while the situation will not improve in the medium term without direct and concerted efforts by developed countries.

26. The second issue refers directly to the process of strategy and policy formulation, implementation and management in the developing countries and the scope for national action within an international framework. If the developing countries are to achieve sustained industrial growth, their policy makers must first take full account of both growing international interdependence and internal development potentials. They should also devote greater attention to the better utilization of existing industrial bases so that the industrial capacities built up under different premises over the past two decades can be adjusted to new conditions in the 1980s and 1990s.

27. The formulation of industrial strategies for the next two decades requires that certain factors be studied and their implications for industrialization understood. These factors include the use of new technologies, the development of resource management systems, the growing sophistication of policy-making and industrial planning processes, the strengthening of linkages between manufacturing and other sectors, and the co-ordination of micro- and macro-economic policies.

28. In strategy formulation, the focus would first be on developments conducive to socio-economic goals, secondly on a systematic long-term utilization of prospective industrialization potentials from internal and external dynamics and, thirdly, on a continuous assessment of international challenges and uncertainties. This, in turn, would necessitate a closer surveillance of international development processes and their driving forces.

29. The time dimension of industrialization strategies and policies will also need to be considered: short-term policies designed to overcome immediate constraints need to be closely linked with long-term strategies so as to ensure consistency and sustained development. Simililarly, increased flexibility and built-in options for the readjustment of long-term strategies and policies may be called for in the 1980s and 1990s in view of the prevailing uncertainties, rapidly shifting parameters and changing policies in other countries.

30. By its very nature, the formulation of national industrial strategies for the 1980s and 1990s also entails determining the degree of international integration and co-operation. The scope for and constraints upon sub-regional, regional and international industrial co-operation need to be systematically assessed. The potential long-term economic benefits of enhanced co-operation are obvious. The establishment of such co-operation and the overcoming of obstacles, however, is a gradual process that calls for the immediate re-orientation of national strategies.

31. In analyzing emerging prospects and challenges and identifying options for strategies and policies conducive to enhanced industrial development in the 1980s and 1990s, two crucial parameters need to be considered. The first is the degree of manoeuvre open to individual developing countries when choosing strategies within the existing international system: the second is the action-reaction relationship between developed and developing countries.

32. Although no clear-cut policy and strategy prescriptions are available to the developing countries for the 1980s and 1990s, a set of structural adjustment policies designed to respond to external pressures and growing challenges to the current industrial structure is needed, if economic growth is to be stimulated and industrialization promoted in the developing countries. These policies must emphasize increasing productivity and investment as a means of stimulating growth, but they will also have to take into consideration other relevant policy instruments such as exchange rates, import levies, export subsidies, domestic savings, and sectoral developments in agriculture and energy.

INDUSTRIAL STRATEGIES AND POLICIES OF DEVELOPING COUNTRIES IN PERSPECTIVE

33. As emphasized above, developing countries are at present confronted with the problem of re-assessing and formulating strategies to respond to external and internal constraints and to exploit new industrial development potential, both in the short and long term.

34. The basic international framework for continued industrial development in the developing countries and the scope for the global restructuring of industry are undergoing drastic change in terms of the patterns and modalities of international trade, the functioning of the international financing system, the changing international price structure for commodities, and technology.

35. These changes will greatly affect the market orientation and industrialization pattern in all developing countries. It is, however, essential to assess the degree to which these various external forces affect individual developing countries and to determine the scope for alternative policy and strategy options in response to those forces in countries with different production and trade structures.

36. These effects will vary significantly depending on the degree to which the given developing country is already integrated into the international industrial production system, where the developed market economies constitute the main outlets for developing country exports.

37. In examining the key issues for developing country strategies in the 1980s and 1990s in terms of the impact of international trade and developing country policies, it seems appropriate to single out for analytical purposes:
(i) countries with an apparent potential for increased exports of manufactures;
(ii) countries with potential for domestic market-oriented industrialization; and
(iii) countries still at the initial stage of industrialization. This categorization would seem to be useful not only when analyzing issues relating to external forces, but also when focusing on the domestic aspects of industrialization in the developing countries. It is also useful when considering the scope for international co-operation between developing countries acting collectively in support of national strategies.

38. On the other hand, it is important to ensure that the final objective is duly accounted for, when conducting disaggregated analyses of future potentials, constraints and industrial development options for the different types of countries. The overriding concern is to synthesize national perceptions and establish commonalities and joint actions for the developing countries as a whole.

Developing countries with an apparent potential for increased exports of manufactures

39. When considering industrial strategies which entail increased exports of manufactures in the 1980s and 1990s, developing countries face the problem of increasing competition in stagnating and protected developed country markets and fiercely contested developing country markets.

40. On the basis of past experience and prospective analyses of international market developments, current technological trends and corporate strategies, individual developing countries may be able to single out industrial sectors, subsectors, or product groups with significant export potential in developed or developing country markets. They must establish whether they have a dynamic comparative advantage in industries such as textiles and clothing, electronics, food processing, selected mechanical and electrical capital goods or processed minerals. They must also ascertain whether a specialization pattern can be envisaged among developing countries that would be positive and active rather than defensive. Finally, they must ensure that the prevailing institutional structures are adequate to the flexible approaches they are adopting.

41. In the mineral processing sector, the developing countries may have clear potentials, but they will also face significant problems in terms of securing investment financing and ascertaining market access in periods of global over-capacity. In the petroleum processing industry, some major oil exporting countries envisage continuing the expansion of their capacities for export. Although refining capacities in the world are largely underutilized, recent developments indicate potential increases in demand and the increasing obsolescence of refining plants in developed countries which may be gradually phased out.

42. Export potential may also be given for some developing countries in terms of human resources for competitive, labour-intensive manufacturing. Broadly speaking, many developing countries will continue to enjoy a comparative advantage in labour-intensive standardized products for export to developed countries, although increasingly saturated markets and the growing number of low-wage competitors may limit the scope of such strategies.

43. As an illustration of the complex issues involved, two traditional export-oriented industries in the developing countries might be mentioned: textiles and electronics. An examination of current trends in the textile and clothing industry indicates that indiscriminate reliance by developing countries on production for export to developed countries is not feasible, at least in the medium term. For some relative low-cost developing countries just entering the production field, there would seem to be limited scope for exports by shifting quota allotments from currently dominant exporters, while clear long-term prospects exist for exports to the potentially large markets of the developing countries themselves. Since many large developing countries may attempt to establish their own production capacities to serve domestic markets, the scope for technical co-operation and specialization among developing countries will increase.

44. More specifically, current trends seem to indicate that for the cotton-based industries, competition on a saturated international market will be mainly between developing country producers. The export markets for developing countries will grow mainly in respect of synthetic fibre blends. As for clothing, it is questionable whether developing countries will succeed in producing competitive, high-quality products and thus penetrate the increasingly protective developed country markets.

45. In the electronics industry, it would appear that only a few developing countries might succeed as producers and exporters of integrated product groups. Certain growth poles in Latin America, Southeast Asia, the Middle East and the Mediterranean area may continue to maintain their share of the export-oriented production of electronic components.

46. The choice of technology and source of material inputs for the export-oriented industry are of increasingly crucial importance to developing countries. The demand for a high degree of efficiency makes essential the introduction of process and product technologies and inputs to international standards, thus increasing the import-intensity of export industries. Export-promotion policies should thus provide for extensive liberalization of imports to those industries. In the longer term, however, policies will need to be oriented towards upgrading developing country capacities so that they can develop indigenous technological skills. The development of new technologies and the growing systematic use of selected domestic inputs would offset the risk of export strategies creating and sustaining an export enclave with little linkage to other domestic industries and eventually yielding little net foreign exchange revenue: a development that has been observed in the past.

47. When considering export-oriented strategies, particular care must be displayed in the choice of agents for development. Hitherto, transnational corporations (TNCs) have been the dominant partners in this field since they were able to provide the technology, finance, and marketing skills required. It should now be established whether and to what extent third world multinational corporations (MNCs), developing country trading houses or domestic firms could be relied upon in the future to undertake the tasks associated with implementing the new strategies of the coming decades.

48. For countries attempting to pursue these strategies, the problem of assessing which subsectors of manufacturing and which markets have the greatest potential in the 1980s and 1990s is both crucially important and difficult in the light of prevailing uncertainties. Given the trend towards increasing protectionism and official export support schemes in the developed countries, the question arises as to which new types of bilateral, regional and interregional trade agreements (including compensation deals) offer the developing countries the best opportunity to improve their exports to developed and other developing countries.

49. Developing countries therefore need to analyze much more systematically than in the past their potentials for dynamic trade with other developing countries.

Adopting this approach will, in turn, require that new modalities be conceived for increased South-North and South-South trade.

Developing countries with potential for domestic market-oriented industrialization

50. Among these developing countries, some have very large, growing populations and thus extensive domestic markets (current or potential) for manufactured products. There are indications that several of these developing countries may devote increasing attention to the systematic utilization of the opportunities that their own markets provide for sustained industrial development. To a certain degree, this increase has been prompted by export setbacks in recent years and by the lack of development stimuli among the export industries for the industrial sector as a whole. A high import content in the current structure of industry in general and the export industry in particular is another reason for re-considering the introduction of a new type of selective import substitution.

51. A domestic market-oriented industrial strategy would obviously still aim at selected exports of manufactures. However, one set of policies might focus on the vehicle of income distribution to generate domestic demand and on using industrial production to enhance supplies of essential products for the broad categories of the population and for employment. Focal issues would thus include integrating industry with agriculture and mining, and mixing modern and traditional industries. Key questions would include the extent to which one can overcome problems associated with inefficiencies and the high cost of production in industry, and the policies best suited to their solution.

52. Attention should also be given to the problem of overcoming increasing adjustment pressures common to industry in many developing countries so as to ensure a dynamism in production processes and product development. In this connection, it is essential to examine those aspects of strategy related to technology policy and, in particular, the relationship between output-oriented and employment-oriented technologies and their rationale in specific situations. Recent technological developments also indicate that scope exists for the application of small-scale production processes to various industrial activities. The development and introduction of such new technologies might help to overcome the problem faced by certain product groups in respect of the relative smallness of domestic markets.

Developing countries at the initial stages of industrialization

53. Most developing countries have only achieved a very limited level of industrialization. In the past, the majority have pursued an industrial strategy of import substitution in various light industries. Within this large group of countries, special attention needs to be given to the smaller countries whose domestic market-oriented industrialization is particularly limited. Attention should also be given to low-income countries which seem to lack the financial (and other indigenous) resources needed to acquire the necessary basic infrastructure as well as the resources essential to establishing internationally competitive industries. These countries include many of the least developed countries and many of the small island nations, with African countries clearly dominating the group.

54. Within this group of countries, the small island developing countries face a singular situation from the standpoint of formulating industrial strategies. For many of them, high transport costs represent significant obstacles to closer linkage with world industrial production and their domestic markets are extremely small. In some of these countries, mineral resources will have to be exploited with great care, both during the period of exploitation and once depleted, so as not to disrupt socio-economic development. In all probability, these countries will only be able to build up a limited industrial structure based on local raw materials and skills and in the form of small-scale plants mainly directed towards local consumption (food, textiles, etc.) One issue that calls for special attention is the manner in which the potential marine resources that have become available as a result of the new international Law of the Sea can be systematically utilized: either directly for purposes of industrial processing or indirectly as tredeable commodities. A second issue hinges on the scope for subregional techno-economic co-operation and the type of schemes that could be evolved so as to ensure at least a minimum degree of industrial complementarity with other developing countries. It should also be explored whether special industrial co-operation schemes could bring about a new form of support for these minor economies.

55. Many of the countries in Africa have established only a very limited industrial base. Whereas for all the developing countries in Africa the share of

MVA in GDP amounted to some 10 per cent in 1980, about half of the (52) countries had a share of less than 7 per cent. This latter group of countries is facing increasing difficulties in their industrialization endeavours owing to internal constraints, dwindling foreign assistance, and small fragmented markets. Previous attempts to establish economic grouping on a subregional basis in order to create a broader market for industrial products do not seem to have yielded major results. Renewed attempts are now being made (such as the Southern African Development Coordination Conference), but it is still uncertain whether they can manage to overcome built-in political and economic constraints.

56. It would seem essential that the poorer African countries take steps to co-ordinate foreign technical assistance and assess the extent to which existing industrial capacities can be utilized to provide inputs into major foreign aid programmes. The African continent is richly endowed with mineral resources, and given a revival of the international economy, mineral-based industrialization may well constitute a promising option for a number of African countries.

57. The major issues governing the formulation of strategies and policies for the 1980s and 1990s in this group of countries relate to their current dilemma: the lack of a sizeable domestic market, the absence of an industrial base and the shortage of resources (investible and human) needed to build up export-oriented industries. In a period of intensive international competition, rapid technological development and international financial tension, these countries need to adopt a dual approach: a policy of endogenous resource-based industrialization using small-scale processes and building up integrated agro-industrial production in tandem with new approaches to international industrial co-operation.

58. Given the similarity of production structures in these countries, the scope for mutual industrial co-operation would appear limited in the short and medium term. This notwithstanding, the issue of possible co-operation schemes remains of crucial importance to enlarging markets, attracting more direct foreign investment, pooling resources and effecting the joint purchase of products and production inputs. The scope for increased industrial complementarity in the long term warrants attention, as does the question of industrial co-operation

between developing countries at an initial stage of development and other developing countries. Finally, the development of co-operation schemes with developed countries also deserves investigation and the extent to which such schemes can support rather than limit co-operation at a subregional, regional or inter-regional level should be studied.

INTERNATIONAL CO-OPERATION AND THE ROLE OF UNIDO

59. In the analysis above a number of key issues were identified related to the directions in which industrial development strategies and policies for the 1980s and 1990s could - or should - move. The objective of such strategies and policies is to re-set the focus on industry as the vehicle for sustained overall development and on the long-term industrialization process.

60. Industrial development is clearly not an end in itself. It is a common denominator of sectoral growth and a central driving force of overall development. Formulating industrial development strategies and policies thus requires an appreciation for and a determination of the prospective role of industry within the complex setting of national development. It calls for an understanding of the fact that the choice of focus is not, for example, on industry as opposed to agriculture, on industry as opposed to trade, nor indeed on industry as opposed to manpower. On the contrary, the focus on industry offers such options as directing industry (agricultural machinery, processing, etc.) towards increased food supply, defining the market orientation of industry, and determining the utilization and upgrading of human resources through industry.

61. Formulating industrial strategies and policies requires that policy makers change their perceptions of industrialization. It implies both an appreciation and determination of the dynamic role and position of a country's industry in the international industrial production system and overall development framework. The key issues in this regard concern the inter-relationship between strategic approaches at the national, subregional and regional level, as well as for the developing countries and world as a whole.

62. These issues need to be approached on two levels. First, national policy makers' perceptions and notions of future strategies in individual developing countries should be ascertained in the light of new parameters, whereafter the degree of convergence or divergence of ideas can be established. At the same time, a normative approach is called for. Consideration should be given to those strategy options, especially at a global level, that would ensure real growth for all countries through a restructuring of world industry and an efficient international division of labour. It is in this context that the international organizations - and particularly UNIDO - have a special role to play. Identifying the potential and requirements for industrial co-operation - intra-regional and inter-regional - should thus be the particular concern of UNIDO. The most decisive factor is the extent to which the co-operation scheme so developed is more than the sum of its component parts. Experience of earlier regional co-operation schemes among developing countries has shown that it has often been very difficult to distinguish between reality and rhetoric. A note of guarded optimism about such schemes' prospects of success would appear justified.

63. In the case of South-South co-operation, arguments in favour of the creation of a new economy for the South seems sound. The size of the "internal market" and possible economies of scale offer great production opportunities, as does potential for learning-by-doing. It would also provide ample scope for sharing risks and reducing uncertainty. Furthermore, genuine commitment to such a strategy by the countries of the South would also permit the creation of compensation mechanisms within the scheme that would guard against polarization in the distribution of the benefits.

64. South-South co-operation, however, is intrinsically a long-term solution. If it is to reach fruition, consistent and supportive short- and medium-term policies and strategies at both the national and international level (and designed in full awareness of interdependence) are required. Appropriate action has to be taken now at both the global and national level, and debate at UNIDO IV could focus on the consistency and convergence of these policies and strategies.

65. Most, if not all, of the issues raised in this paper are of direct relevance to the broad mandate of UNIDO. The question which this meeting - and later UNIDO IV - must address is that of identifying the specific issues of highest

priority and most pertinent to the future work programme of UNIDO. Given the emerging industrial development patterns and the strategy and policy issues faced by various developing countries, these areas of highest priority will have to be selected in terms of the technical co-operation activities, advisory services, action-oriented analyses, information services and promotional activities undertaken by the Organization.

FOURTH GENERAL CONFERENCE OF UNIDO

Draft Provisional Agenda

1. Opening of the Conference
2. Organization of the Conference
    - (a) Election of the President
    - (b) Adoption of the agenda
    - (c) Adoption of the rules of procedure
    - (d) Election of officers other than the President
    - (e) Organization of committees
    - (f) Credentials of representatives to the Conference
3. General debate
4. Lima and New Delhi Declarations and Plans of Action: retrospective and perspective
    - (a) Review of progress and constraints
    - (b) Perspectives for the achievement of the Lima target
5. International co-operation, relevant national actions including industrial policies, and UNIDO's contribution in critical areas of industrial development 1985 - 2000
    - (a) Accelerated development of human resources for industrial development
    - (b) Strengthening of scientific and technological capacities for industrial development in developing countries
    - (c) Mobilizing of financial resources for industrial development
    - (d) Energy and industrialization, with special emphasis on development and application of energy resources and manufacture of equipment
    - (e) World industrial restructuring and redeployment
    - (f) Policies and measures for domestic industrial processing of raw materials in developing countries
    - (g) Industrial policies and measures to achieve rural development and self-sufficiency in food supplies in developing countries
    - (h) The least developed countries: implementation of the Substantial New Programme of Action
    - (i) Strengthening economic co-operation among developing countries
6. The Industrial Development Decade for Africa: review of progress, and proposals on ways and means to attain its objectives
7. UNIDO's co-ordinating role in the United Nations system on industrial development
8. Conclusions and recommendations
9. Adoption of the report of the Conference
10. Closure of the Conference

HIGH-LEVEL EXPERT GROUP MEETING PREPARATORY TO UNIDO IV: INDUSTRIAL DEVELOPMENT STRATEGIES AND POLICIES FOR DEVELOPING COUNTRIES

Lima, Peru

18 - 22 April 1983

Draft Provisional Agenda

1. Opening of the Meeting

2. Election of the Chairman, Vice Chairman and Rapporteur

3. Adoption of the Agenda

4. Setting the Scene - Plenary

   A. Achievements, setbacks and constraints on industrial development in the third world in the 1970s: a critical review of recent strategies, policies and developments

   B. The current international crisis and its impact on developing countries' industrial development: An overview

   C. Consideration of strategies and policies in the 1980s and 1990s: an introduction

5. Industrial strategies and policies of developing countries in perspective: a detailed review of current trends and emerging strategy and policy responses - Working Groups

   A. Strategy and policy issues relating to developing countries with potential for increased exports of manufactures

   B. Strategy and policy issues relating to developing countries with potential for domestic market-oriented industrialization

   C. Strategy and policy issues relating to developing countries in the initial stages of industrialization

6. Report of the Working Groups to the Plenary

7. International co-operation, relevant national actions including industrial policies, and the role of UNIDO: conclusions and recommendations

8. Adoption of the report of the Meeting

9. Closure of the Meeting

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HIGH-LEVEL EXPERT GROUP MEETINGS PREPARATORY TO THE FOURTH GENERAL CONFERENCE OF UNIDO

Industrial Development Strategies and Policies for Developing Countries

Lima, Peru, 18–22 April 1983

SOME TRENDS IN WORLD INDUSTRIAL DEVELOPMENT

Policy Implications for Future Actions

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EXPLANATORY NOTES

The following classification of economic groupings is used in the text and in most tables, in conformity with the classification adopted by the United Nations Statistical Office: "Developing countries" includes the Caribbean area, Central and South America, Africa (other than South Africa), West Asia (other than Israel) and South and East Asia (other than Japan). "Developed market economies" includes North America (Canada and the United States of America), Europe (other than Eastern Europe), Australia, Israel, Japan, New Zealand and South Africa. "Centrally planned economies" includes Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania and the Union of Soviet Socialist Republics. Unless otherwise specified, "world" excludes Albania, China, the Democratic People's Republic of Korea, Mongolia and Viet Nam.

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Introduction

The performance and growth of world industry in recent years suggests a distinct departure from the experience accumulated over the three previous decades. This departure involves very basic changes that go beyond the mere general slowdown in world economic activity which occurred in the late 1970s. For instance, composition of manufacturing activities is rapidly changing; many of yesterday's major growth industries are stagnating while new ones are taking hold. Simultaneously, new issues involving technology, finance, trade, etc. are emerging.

These are but a few of the issues contributing to the uncertainties which must be faced by policymakers and strategists in both the developing and the developed countries. The complexity of the policymaker's dilemma - whether with regard to industry-specific issues, sector-wide problems or international questions bearing on the manufacturing sector - can not be adequately described in a paper so brief as this one. Instead, the following discussion merely attempts to highlight some of the major changes in world industry having important policy implications.

This paper begins by looking at the changing international distribution of manufacturing activity. The most important dimension of this redistribution concerns relative shifts in the position of individual developed countries - the effects of which are seen in the formulation of international policy that relates to the industrial sphere. Turning to the developing countries, the paper outlines recent changes in the composition of manufacturing activity and draws attention to the declining rate of structural change in the manufacturing sector. Trends in manufacturing employment, productivity and output are introduced in connection with these discussions. Although decisions with regard to major strategies such as import substitution and export promotion are based on a large number of factors, one consideration involves the relative importance of different sources of growth. The paper presents the results of an investigation of this aspect and summarizes the findings contained in a larger UNIDO study on the related subject of comparative advantage. The discussion concludes with a multi-country analysis of patterns of consumption of industrial products which suggests that many basic needs in developing countries are not adequately met.

The Changing Map of World Industry

A simple overview of the changing world industrial map in terms of the global distribution of manufacturing value added (MVA) is found among the selected statistical indicators.[1/] The data distinguish between the three economic groupings[2/] and summarize changes in the pattern of world MVA in various years between 1938 and 1982. The share of the developing countries shows a steady, although gradual rise from 1953 until 1978; in later years, relative gains occurred more erratically. Throughout the period 1963-1982,

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[1/] See ID/WG.391/1, table 3.

[2/] Owing to conceptual differences in the national accounting practices of the developed market economies and the centrally planned economies, original data for the two economic groupings are not comparable. A statistical investigation was undertaken by the secretariat of UNIDO to derive a set of data that would permit a comparison of the shares of the three economic groupings in world manufacturing value added. The data given for the centrally planned economies should nevertheless be regarded as estimates.

the share of the developing countries increased from 8.1 per cent of world MVA to 11 per cent. These gains are marginal, however, in comparison with the strides made by the centrally planned economies where the corresponding figures were 14.6 per cent in 1963 and 25.0 per cent in 1982. The relative decline of the developed market economies, although gradual, appears to be a long-term phenomenon dating back to the late 1940s. Long-term trends were re-enforced by the general slowdown in world growth which occurred after 1974. The developed market economies were more seriously affected in this regard than the two other country groupings.[1/] One result was that the downward trend of the developed market economies accelerated after 1974.

While figures such as these provide a rough impression of trends in world industry, they are of limited use for the purpose of the present discussion. Perhaps the most that can be said is that a constant feature of world industrial activity has been the continued dominance of the developed countries. Indeed, during the first quarter of this century only a small number of developed countries accounted for at least 95 per cent of world MVA. Producers in the developing countries were mainly onlookers and not participants in this phase in the growth process.

A more detailed breakdown of the distribution of world MVA is required in order to gauge the basis for international industrial

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[1/] Index numbers of industrial production support this observation, showing that levels of manufacturing activity in developed market economies actually dropped in 1974, 1975, 1980 and 1982. Data on this aspect will appear in the Survey (forthcoming).

policy. Countries obviously embarked on a course of industrialization at different periods in their history, depending on when they achieved independence, when they deemed industrialization appropriate, etc. Thus, for illustrative purposes, one means of examining the consequences of different growth experiences and policy approaches is to distinguish between countries according to how long they have been engaged in industrialization process. Such an arrangement of countries is shown in table 1.[1] The developed market economies are divided into three subgroups: countries whose post-war record of growth in the manufacturing sector reflects a long and uninterrupted history, countries where manufacturing has grown at a comparatively fast rate, either because the sector became important only in the last three decades or because the sector recovered from the war destruction, and a residual group of countries. The developing countries are separated into two subgroups: the semi-industrialized and a residual of other developing countries. The centrally planned economies are shown as a separate group.

The consequences of the recent slowdown affected almost all the developed market economies, including the late industrializing

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[1] The figures shown here provide only approximate indications of trends over the entire period 1938-1980, being derived from both current price data and constant price data and from different sources. Because of these drawbacks, the data for different years are not necessarily comparable although they do provide a sufficient basis for drawing some conclusions as to the directions of change in the world industrial map.

TABLE 1

ESTIMATED SHARES IN WORLD MANUFACTURING VALUE ADDED BY COUNTRY GROUPINGS AND ILLUSTRATIVE SUB-GROUPS

	1938	1948	1953	1963		1970	1973	1975	1978	1980
loped Market Economies which:	61.0	72.2	72.0	64.8	77.3	73.4	72.0	67.5	66.8	65.2
ture Market Economies[a/]	41.0	58.7	55.2	44.5	46.1	39.6	38.8	35.7	35.0	33.4
te Industrializing rket Economies[b/]	13.8	6.5	10.4	14.0	22.9	25.8	25.4	24.2	24.5	24.3
hers	6.2	6.9	6.4	6.2	8.3	8.0	7.8	7.6	7.3	7.5
rally Planned Economies	34.5	22.1	23.2	28.5	14.6	17.8	18.7	22.5	22.9	23.8
loping Countries which:	4.5	5.7	4.8	6.6	8.1	8.8	9.3	10.0	10.3	11.0
mi-industrialized untries[c/]	3.3	4.0	3.2	4.4	5.5	6.0	6.5	7.0	7.2	7.7

ce: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis and the Statistical Office of the United Nations secretariat, with estimates by the UNIDO secretariat.

te: Data for the years 1938 - 1963 are in current prices. Figures for 1938 - 1963 were derived from data compiled according to industrial census concepts. Figures for the years 1963 - 1980 were compiled from national accounts sources for manufacturing value added expressed in US dollars at 1975 prices.

/ Mature market economies were defined to include Belgium, France, Luxembourg, Netherlands, Norway, Sweden, United Kingdom of Great Britain and Northern Ireland and the United States of America.

/ Late industrializing market economies are the Federal Republic of Germany, Greece, Ireland, Israel, Italy, Japan, Portugal and Spain.

/ Semi-industrialized developing countries and territories include Argentina, Brazil, Colombia, Egypt, Hong Kong, India, Malaysia, Mexico, Philippines, Republic of Korea, Singapore, Thailand and Turkey.

ones. The share of this sub-group had steadily increased from 1948 until the early 1970s implying that much of the redistribution of world MVA was actually a relative shift of manufacturing activities from one sub-group of developed market economies to another. But this compensatory effect slackened as the slowdown in world growth became more severe. By the beginning of the 1980s, the mature market economies accounted for little more than one-third of world MVA while the share of the late industrializing market economies was less than one-fourth.

Some Implications for the Formulation of International Policies

The significant point arising from this description relates to the substantial change of individual country shares in world MVA. It is this fact which has had a considerable impact on the formulation of international policies pertaining to industry. Gradual changes in the global distribution of world MVA eventually altered many of the basic premises which, heretofore, had guided international industrial policy. Since 1950, policy makers in several of the major industrial economies have seen a relative decline in the international role of their countries' manufacturing sectors. These declines were often accompanied by a parallel deterioration in the countries' relative importance as world suppliers, both in terms of total exports and exports of manufactures. Such trends were not unique to one or two countries; they occurred in several developed countries. For instance, table 1 shows that, during 1963-78, the combined share of world MVA in eight major industrial countries declined from 46 to 33 per cent.[1] A different set of experiences apply to other countries which have steadily increased their importance as industrial powers. These gains were matched by a similar expansion in the countries' shares of world exports of merchandise and manufactures.[2]

The realignment of world industry has altered the international environment within which governments formulate their industrial policies. The internationalization of economic relations - in today's parlance, a greater degree of economic interdependence - is thought to be inversely related to the degree of equality in the distribution of power between nations.[3] However, the post-war rearrangement of the world industrial map has led to the emergence of several relatively equal industrial powers and, in turn, has created a collegial form of policy negotiation. Many policy decisions are now fashioned by consensus between a growing number of different country coalitions depending upon the issue involved.

Briefly stated, the formulation of international policy by the developed countries has become multipolar. The dispersion of capacity among these countries has altered each country's approach to international policy in the industrial sphere. And as their shares in world production have changed, so have their capacities to influence international industrial policies. In the case of MVA, such trends are clearly evident in the data presented here. Accordingly, the basis for negotiations on international policy issues pertaining to trade, investment, technology and industry has undergone a subtle readjustment reflecting the changes in the world industrial map.

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[1] Figures were compiled from national accounts data, expressed in US dollars and at constant prices. The eight countries include Belgium, France, Luxembourg, Netherlands, Norway, Sweden, the United Kingdom and the United States.

[2] Thus, between 1963 and 1980 the redistribution of world MVA included the following shifts (in percentage): the United States: 30.2 to 21.1; the United Kingdom: 5.6 to 3.0; Japan: 6.4 to 9.4 and the Union of Soviet Socialist Republics: 9.2 to 15.9. Additional figures will appear in the Survey (forthcoming).

[3] OECD, Facing the Future: Mastering the Probable and Managing the Unpredictable (Paris, OECD, 1979), p.77-78.

Faced with such a fundamental change, there are several reasons why the governments of developed countries have adopted a more tentative approach to international questions of industrial policy. Their hesitation can be partly attributed to inexperience in the present collegial, or multipolar, system. However, there are other, equally important reasons. First, greater interdependence has accentuated the importance of foreign markets and suppliers at the expense of domestic activities. Under such circumstances, the efficacy of national policies is sometimes reduced while policy makers are faced with a greater margin of uncertainty when making decisions. These dilemmas derive from actual problems: (a) unfamiliarity with the characteristics of foreign markets and suppliers and the inability to influence these firms by domestic means; (b) the fear that external suppliers may impose contraints on domestic development by cutting deliveries, raising prices or enforcing an embargo; (c) the prospect that reliance on imported capital goods may relegate domestic users to an inferior technology or lessen their ability to influence the nature of technological advances.

Second, long-term employment trends reveal a decline in the manufacturing sector's share of total employment in several developed countries. While earlier types of employment shifts, i.e. from agriculture to manufacturing or within the manufacturing sector, were easily accomplished, displaced workers may not be easily transferred from the manufacturing to the tertiary sector where employment has been growing.[1] These and other circumstances may have resulted in a "mismatch" in the demand for and supply of resources, including labour. Thus, when major structural shifts occur, labour and other resources do not flow immediately from unprofitable or contracting activities to new ones with growth potential. During the period of transition, the growth of income may be reduced. The mismatch in resource requirements is reflected in the simultaneous existence of labour shortages in some areas and job shortages in others, together with long delivery delays in some products and surplus capacity in others. Thus, some governments are inclined to respond by holding back the rate of structural change, thereby limiting the restructuring process.[2]

Turning to the developing countries, there is a similar need to look beyond the broad trends in order to draw any meaningful conclusions about industrial progress and the attendant policy implications. There are, of course, a variety of ways to examine the industrial experiences of these countries, any of which may have policy implications; only a few aspects can be considered in a brief paper such as this.

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[1] Jobs in the tertiary sector typically pay less than jobs in manufacturing and are often only part time. Thus, they are more attractive to new workers than to those previously employed in industry.

[2] Further discussion of the consequences of these mismatches see Michael Beenstock and Patrick Willcocks, "The causes of slower growth in the world economy", Discussion Paper no.76 (London, London Business School, 1980) and Michael Beenstock, World Industry in Transition, George Allen and Unwin, London, 1983.

Table 2 provides a picture of the industrial performance of the developing countries according to level of income. The table distinguishes between five income groupings, providing data for the corresponding growth rates of manufacturing output, share of population and number of countries. Two points emerge from the results of these calculations. First, the growth rates in the low-income countries were, on average, significantly less than those recorded for other income groups. In view of the disparities in prevailing levels of *per capita* income, even relatively small differences in growth rates will have consequences for the standards of living in the poorest countries and, in this sense, the gap between the low-income group and other groups is significant. Moreover, in 1980 over one-half the population of the developing countries was to be found in the low-income countries. Second, it was mainly countries in the intermediate-income range ($600-1,320), and the upper-middle income range ($1320-2415) that provided the impetus for the growth of the manufacturing sector throughout the developing countries. These are mainly small countries that accounted for 28 per cent of the population in developing countries in 1980.

A similar picture is obtained when attention is focused on the least developed countries. For instance, growth of industrial production in the least developed countries slowed noticeably in recent years, amounting to only 3.0 per cent per annum in 1973-1980

TABLE 2 GROWTH RATE OF MANUFACTURING VALUE ADDED IN 95 DEVELOPING COUNTRIES, BY INCOME GROUP, 1963 - 1980

Income	GNP per capita (current US dollars) 1978	Growth rate of MVA for the group	Group share in population of the developing countries, 1980	Number of countries in group
Low	295	4.9	50.7	28
Lower middle	295-600	7.3	18.2	21
Intermediate middle	600-1320	8.6	15.7	24
Upper middle	1320-2415	8.6	12.3	11
High	2415	5.8	3.1	11

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis and the Statistical Office of the United Nations secretariat, with estimates by the UNIDO secretariat.

compared to 5.8 per cent in 1963-1973.[1] The very limited extent to which these countries are participants in the development of world industry is suggested by the fact that they accounted for no more than 0.2 per cent of world MVA in any year during the period 1963-1980.[2] The process of industrialization has yet to really begin in these countries.

The Changing Composition of Manufacturing Output

A more detailed picture of the differences between developed and developing countries may be obtained from a comparison of the changing composition of manufacturing output or MVA. The accompanying statistical documentation provides data on the composition of MVA in selected years and rates of growth for the individual industrial branches.[3] Various studies have suggested that patterns of structural change in the three economic groupings may differ markedly and, if so, will lead to substantial differences in the composition of MVA. One means of testing this hypothesis is shown here. Each of the 28 branches of manufacturing was ranked by its share in net output in three separate years for each developed market economy and developing country for which data were available.[4] These rankings were then tested to determine the degree of structural similarity within each cell. The results are given in table 3.

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[1] UNIDO data base; information supplied by the Office for Development Research and Policy Analysis and the United Nations Statistical Office, with estimates by the UNIDO secretariat.

[2] UNIDO, A Statistical Review of the World Industrial Situation, 1982 (IS.368).

[3] See ID/WG.391/1, tables 10 and 11.

[4] Although comparable figures were available for seven centrally planned economies, similar tests were not carried out since the number is too small to allow for an evaluation of statistical significance.

Measured in the above manner, the composition of MVA in developed market economies showed a considerable degree of similarity. Equally important, the similarity in rankings increased over time. A comparison of the coefficients between the developed market economies and the developing countries revealed a distinct difference in output mix. Furthermore, there was no observable trend (upward or downward) in the similarity of the developing countries' pattern.

The foregoing analysis and results appear to support the conclusion that the structure of MVA in the developed market economies has gradually become more homogeneous. No similar trend is found with regard to the developing countries; if anything, the composition of MVA in these countries is becoming more dissimilar over time. Such structural changes could have important consequences for several aspects of development, including productivity trends, patterns of industrial investment, trade in manufactures and the choice of industrial policies. Although a clear picture of these consequences would require greater study, a few broad and tentative interpretations may be made. First, greater homogeneity in the pattern of manufacturing production in the developed market economies may contribute to increased competition among these countries. Other things being equal, greater homogeneity would lead to comparable trends in productivity, investment and rates of return, and patterns of industrial demand. Second, among the developing countries the degree of homogeneity is certainly less. Not only do they face a different set of industrial problems from those confronting the developed countries, but the

TABLE 3. KENDALL'S COEFFICIENT OF CONCORDANCE[a] BETWEEN THE COUNTRY RANKINGS OF 28 INDUSTRIAL BRANCHES (VALUE ADDED)[b]

Sample group (number of countries)	Year		
	1970	1975	1979
Developed market economies (17)	0.803 (65.218)	0.807 (66.902)	0.794 (61.670)
Developing countries (32)	0.541 (36.538)	0.567 (40.594)	0.562 (39.776)

Note: For a definition of adjusted coefficient of concordance, see A.E. Maxwell, Analysing Qualitative Data (London, Methuen, 1967), pp. 117-121.

a/ F values are given in parentheses.

b/ Calculations were in constant United States dollars.

industrial problems and circumstances differ widely among countries within this economic grouping.

A rough impression of the magnitude and scope of structural change can be gained by comparing the share of expanding and contracting industries in different years. The results, shown in table 4 serve to distinguish between patterns of change occurring in the 1960s and those observed during the 1970s. During the period 1963-1973, the relative magnitude of these structural shifts was greatest in the developing countries being equivalent to 12.2 per cent of MVA. In developed market economies the magnitude of the contractions and expansions between 1963 and 1973 amounted to 6.3 per cent of MVA compared with a figure of 11.2 per cent in centrally planned economies. The extent of structural change during the 1970s was noticeably less than that experienced in the 1960s in all three economic groupings. In the developing countries structural shifts were equivalent to only 5.0 per cent of MVA in 1973-1979. An even smaller proportion, 3.0 per cent, can be noted in the case of the developed market economies while centrally planned economies experienced the largest change, equivalent to 6.7 per cent of MVA.

When employment and productivity trends are taken into consideration, the differences between the developed and the developing countries are more marked. Table 5 shows that employment in both developed market economies and centrally planned economies expanded at a much lower rate than output. Indeed, during 1973-1980, employment was severely affected in developed market economies, so much so that levels declined in most major industrial groups. Output continued to expand, however, reflecting the importance of productivity gains in the growth of most industries.

TABLE 4. THE SHARES[a] OF EXPANDING AND CONTRACTING BRANCHES IN MANUFACTURING OUTPUT, BY ECONOMIC GROUPS, 1963, 1973 AND 1979

	Developed market economies		Developing countries		Centrally planned economies	
	1963-1973	1973-1979	1963-1973	1973-1979	1963-1973	1973-1979
Contracting branches	47.6/41.3	42.4/39.4	62.5/50.3	50.9/45.9	54.3/43.1	46.1/39.4
Expanding branches	31.5/37.8	41.8/44.8	36.9/49.1	31.6/36.6	43.6/54.8	47.3/54.0

Source: Based on data in table 10, ID/WG.391/1

[a] Percentages exclude those branches whose shares remained unchanged during the period shown. Thus, they do not add up to 100.

TABLE 5. GROWTH RATES OF MANUFACTURING EMPLOYMENT AND PRODUCTIVITY BY MAJOR GROUPS, 1963-1973 AND 1973-1980

		Developed market economies			Developing countries			Centrally planned economies		
		Output	Employment	Productivity	Output	Employment	Productivity	Output	Employment	Productivity
Branch	ISIC	1963-1973/ 1973-1930	1963-1973/ 1973-1980	1963-1973/ 1973-1980	1963-1973/ 1973-1980	1963-1973/ 1973-1980	1963-1973/ 1973-1980	1963-1973/ 1973-1980	1963-1973/ 1973-1980	1963-1973/ 1973-1980
Food, beverages and tobacco	31	3.7 2.6	0.6 -0.0	3.1 2.7	5.7 4.7	3.4 5.7	2.2 -0.9	5.7 3.6	2.5 1.0	3.2 2.5
Textiles	321	3.9 0.1	-1.2 -3.0	5.2 3.2	4.7 2.1	2.6 2.2	2.0 -0.1	6.3 4.2	1.4 0.4	4.8 3.8
Wearing apparel, leather and footwear	322-324	2.1 0.3	0.9 -1.4	1.2 1.7	3.9 2.9	4.1 5.7	-0.2 -2.6	7.6 4.9	3.3 0.7	4.2 4.2
Wood products and furniture	33	4.5 0.9	1.2 -0.9	3.4 1.7	4.7 5.1	5.0 3.7	-0.3 1.4	6.5 4.5	1.2 0.0	5.3 4.5
Paper, printing and publishing	34	4.6 2.4	1.0 -0.0	3.6 2.4	8.7 2.9	4.5 3.3	4.0 -0.3	7.8 4.1	3.0 0.8	4.7 3.3
Chemical, petroleum, plastic products	35	8.1 3.6	1.9 0.1	6.1 3.5	10.1 4.8	5.5 5.2	4.4 -0.4	10.5 6.8	3.6 1.5	6.6 5.2
Non-metallic mineral products	36	4.9 1.9	0.5 -1.1	4.3 3.1	7.8 6.1	4.9 4.9	2.7 1.2	8.3 4.9	3.4 1.1	4.7 3.7
Basic metal industries	37	4.8 -0.1	0.2 -2.0	4.6 1.9	7.7 6.9	6.3 5.2	1.3 1.7	6.7 4.3	2.0 0.9	4.7 3.4
Metal products, machinery and equipment	38	5.9 2.8	2.1 0.1	3.7 2.8	10.6 6.7	5.9 4.1	4.4 2.4	11.2 9.1	3.6 2.0	7.3 7.0
TOTAL MANUFACTURING	300	5.2 2.3	1.2 -0.5	4.0 2.8	7.1 5.0	4.2 4.2	2.8 0.7	8.9 6.7	3.0 1.4	5.7 5.2

Source: UNIDO data base and data supplied by United Nations Statistical Office.

An opposite situation is found in the developing countries.[1] There, the growth of employment exceeded gains in productivity for all major industrial groups. This relationship was particularly evident during the latter time period, 1973-1980. In fact, several major groups - including important industries like textiles and clothing - experienced a decline in productivity in the 1970s. Despite the fact that employment, rather than productivity, was the more important contributor to growth, the developing countries recorded no change in the rate of employment expansion (4.2 per cent per annum) during the two periods shown. In contrast, the growth of total manufacturing output slowed moderately and increases in productivity dropped from 2.8 per cent to 0.7 per cent.

Sources of Industrial Growth in Developing Countries

An important policy consideration concerns the sources of industrial growth and the extent to which each of these sources will vary in importance - both between countries and over time. Conceptually, the sources of industrial growth can be divided into three components: (1) production for export; (2) production in response to growing real demand within the domestic economy; and (3) production to meet existing demand formerly satisfied by imported goods (import-substituting industrialisation). While several alternative methods[2] for estimating these components are available to economists, the usefulness of the exercise is not so much to arrive at precise estimates of growth sources for a particular country as to ascertain the relative importance (or unimportance) of domestic demand, import substitution and export promotion as sources of growth.

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[1] For further detail with regard to productivity trends in developing countries, see ID/WG.391/1, table 13.

[2] The method of estimation employed here follows the procedures developed by Hollis Chenery, "Patterns of industrial growth", American Economic Review, vol.50, no.2, 1960, pp.624-654 and H. Chenery, S. Shishido and T. Watanabe, "The pattern of Japanese growth: 1914-1954," Econometrica, vol.30, no.1, 1962, pp.98-139.

Table 6 summarises the main results of an empirical investigation to measure the sources of growth in a number of developing countries. With very few exceptions, domestic demand is the most significant component of industrial growth. The predominance of this component is particularly evident in the case of intermediate industries. Among the product categories considered in the study, the relative importance of export expansion is greatest in the case of consumer non-durables. The highest (positive) values for import substitution are mainly observed for capital goods and consumer durables. Turning to the observations within each of the product categories, other general tendencies may be observed. Among basic consumer goods a loose relationship with per capita GNP is found. The relative importance of domestic demand appears to decline at lower levels of per capita income. The figures for import substitution show an inverse relation; negative values are generally observed at higher levels of income and positive values are found at lower income levels. Apparently, among the more advanced countries further growth would depend on domestic demand and export promotion while, at lower levels, scope for import substitution still exists. The pattern is roughly similar for intermediate industries although, as indicated above, the figures for domestic demand generally dominate.

TABLE 6: SOURCES OF GROWTH BY END-USE IN SELECTED DEVELOPING COUNTRIES[a/] IN THE 1970s
(percentage)

Country	Basic consumer goods			Intermediate industries			Capital goods and consumer durables			Total		
	Domestic demand	Export expansion	Import substitution	Domestic demand	Export expansion	Import substitution	Domestic demand	Export expansion	Import substitution	Domestic demand	Export expansion	Import substitution
Libyan Arab Jamahiriya	150.9	2.0	-52.5	109.0	-	- 9.0	...	...	...	134.1	1.3	-35.4
Iran	111.5	19.1	-30.6	96.4	1.3	7.3	97.8	1.5	0.7	100.2	4.3	-4.5
Iraq	154.8	-1.9	-52.9	260.9	9.7	-170.6	275.0	0.1	-175.1	221.2	2.9	-124.1
Panama	64.4	4.7	30.9	125.6	0.9	-26.5	...	...	...	91.6	2.5	5.9
Fiji	213.5	-	-173.5	101.8	3.0	-4.8	81.8	0.3	17.9	96.3	1.8	1.9
Brazil	92.4	8.6	-1.0	100.7	2.6	-3.3	-	-	-	99.3	3.4	-2.7
Cyprus	38.7	50.1	11.2	27.0	29.0	44.0	5.4	19.6	75.0	37.8	32.9	29.3
Turkey	91.9	8.6	-0.5	106.5	2.2	-8.7	109.0	1.0	-10.0	102.9	3.3	-6.2
Tunisia	103.2	34.7	-37.9	115.4	18.5	-33.9	149.3	2.6	-51.9	114.2	19.0	-33.2
Chile	-92.7	0.2	-7.5	175.5	30.3	-105.8	-40.6	1.5	-60.9	-35.1	16.4	-81.3
Ecuador	95.1	8.1	-3.2	179.9	4.3	-84.2	79.7	1.2	19.1	108.8	3.8	-12.6
Guatemala	77.7	28.7	-6.4	58.8	13.7	27.5	41.4	5.5	53.1	59.7	13.0	27.3
Colombia	84.4	16.5	-0.9	95.7	13.9	-9.6	64.5	3.1	32.4	84.6	10.3	5.1
Republic of Korea	71.9	18.1	10.0	85.7	10.4	3.9	52.4	15.1	32.5	76.2	13.2	10.6
Ghana	17.3	2.6	80.1	47.9	3.4	48.7	2.2	0.2	97.6	30.1	2.6	67.3
Zambia	49.8	-	50.2	41.8	-0.1	58.3	...	...	...	45.4	-0.0	54.6
El Salvador	69.2	12.4	18.4	88.3	0.3	11.4	548.8	18.2	-467.0	85.6	8.6	5.8
Jordan	181.0	15.5	-96.5	112.2	17.8	-30.0	...	...	...	131.2	16.0	-47.2
Nigeria	72.5	-0.0	27.5	134.6	3.0	-37.6	100.5	-0.0	-0.5	98.8	0.8	0.4
Honduras	50.5	3.4	46.1	72.3	10.3	17.4	60.9	2.5	36.6	64.0	7.0	29.0
Philippines	86.3	8.8	4.9	103.9	7.4	-11.3	98.2	1.3	0.5	99.0	6.6	-5.6
Thailand	57.6	0.2	42.2	91.1	8.2	0.7	42.0	0.5	57.5	57.1	1.6	41.3
Egypt	83.4	17.7	-1.1	81.9	8.2	9.9	58.2	0.7	41.1	77.5	10.0	12.5
Sri Lanka	69.7	3.5	26.8	25.9	8.7	65.4	33.1	2.1	64.8	39.8	6.5	53.7
Madagascar	40.2	4.3	55.5	52.1	7.8	40.1	26.5	0.0	73.5	40.9	4.5	54.6
Indonesia	80.9	1.0	18.1	113.3	1.6	-14.9	49.7	0.8	49.5	78.8	1.2	20.0
India	88.1	11.7	0.2	94.5	2.6	2.9	76.7	4.5	18.8	88.2	5.2	6.6
Malawi	81.3	1.2	17.5	45.3	0.3	54.4	56.0	1.0	43.0	66.1	0.8	33.1

Source: Based on United Nations, Yearbook of Industrial Statistics, vol. I, various issues, Commodity Trade Statistics, various issues; and Yearbook of International Trade Statistics, various issues.

[a/] Countries are listed according to GNP *per capita* in 1975.

The figures for capital goods and consumer durables show a different "growth structure". Import substitution plays a more important role and is often the largest growth source, particularly for countries at the bottom of the income scale. These countries all have small domestic markets and, for this reason, the "easy phase" of substitution is likely to be a brief one. Estimates of export expansion are generally very low which may reflect both the policy bias inherent in the tariff structure of countries that had pursued an import substitution strategy and the growth pattern of "late industries".

As far as exports are concerned, these preliminary estimates show that expansion in foreign demand is rarely important as a source of the output growth of capital goods or consumer durables. In the manufacturing sector as a whole, the ratio of exports to gross output generally does not exceed 6 per cent. For a majority of the 28 countries in the sample, the export-output ratio ranged from zero to 6 per cent. Exports in this range may be important contributors to the acquisition of foreign exchange. They may also be crucial to individual enterprises by contributing to capacity utilization or helping to overcome bottlenecks such as economies of scale. However, on average, the share of exports in domestic production does not suggest many instances of "export-led" growth. Their role is better described as a supplementary one or, at best, that of a catalyst. A more significant feature of the estimates is the lack of a relationship between the level of development and the export of manufactures. Although the value of exports by Brazil, Republic of Korea and Turkey far exceeds those of other countries, the relative importance of exports to the economies of Egypt, Jordan or Madagascar, etc. is of a similar or greater magnitude. This fact serves to qualify the general impression that exporting (particularly exports of manufactures) becomes significant only after a country has reached some threshold or minimum level of development. However, the significance of exports for the domestic economy does not necessarily increase with development. This implies that supply constraints or problems of market access may be equally important to different countries regardless of their level of advancement or size of their domestic market.

The major conclusion to be derived from these results is that domestic demand stands in the forefront of the growth process. Although its significance is of less importance at lower levels of income, there are a few cases where the growth process is primarily based on trade expansion. This finding is somewhat paradoxical in view of the emphasis often given to trade-related strategies for industrialization. The results would seem to point to the importance of policies aimed at spurring the growth of domestic demand. While import-restricting policies can shift demand from imports to domestic production, they may do little to increase consumer or investment demand. Similarly, export incentives may boost domestic demand by employment generation, increased intermediate demand, etc. although the existence of an export enclave would clearly do little to boost domestic demand. More direct policies for increasing employment, realizing a more equitable distribution of income, encouraging the intra-national diffusion of technology (as well as its international transfer), etc. also deserve a high priority.

Changing Patterns of Comparative Advantage

The question of a country's comparative advantage in specific industries or, more generally, its ability to compete in international markets touches upon a wide range of policy issues, involving specific industries and various development strategies. Early studies generally confirmed the notion that developing countries tend to export goods requiring relatively large amounts of unskilled labour and/or raw materials while an entirely different set of input requirements was associated with the exports of developed countries.

UNIDO has recently undertaken an extensive investigation[1] of this aspect. In order to limit this discussion to a manageable scope, four country samples were selected for detailed study. The first includes six industrialized countries (ICs) representing a pattern of comparative advantage which, presumably, is the most advanced. The second sample consists of five recently developed countries (RDCs) that are thought to have comparative advantages in fields representing a less sophisticated export pattern. The third sample is composed of seven countries popularly known as the 'newly industrializing countries' (NICs). Conventional wisdom often singles out these countries as the most zealous exporters of manufactures. They have made strenuous efforts to acquire the technologies and to develop the skilled labour necessary for this approach. The last sample is ten developing countries at an earlier phase of their industrial development and should indicate a more rudimentary export pattern.

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[1] For a detailed analysis of comparative advantage in 134 industries in each of 52 countries, see UNIDO, Changing Patterns of Trade in World Industry (United Nations publication, Sales no.E.82.II.B.1). The study examines changes in comparative advantage in the 1960s and 1970s.

Finally, some proxy to represent an industry's comparative advantage was required. Economists reason that "revealed" comparative advantage can be indicated by the trade performance of individual countries. Accordingly, estimates of comparative advantage used in this study have followed traditional methods[1/] of measuring the concept through the use of export performance indices. Such indices were computed for each of 79 industries[2/] and twenty eight countries in the sample based on two-year averages for 1965-6 and 1975-6.

The analysis began with a ranking of industries according to their export performance indices. The degree of similarity between the rankings of each of the four country samples can then be appraised statistically. The results, based on each country sample's weighted averages for seventy-nine industries, are shown in table 7. It is immediately obvious that the composition of the industrialized countries' exports differs markedly from that of the other groups. Moreover, this distinction is accentuated over time.

A second noteworthy point concerns the comparisons between the three remaining groups - the NICs, other developing countries and the recently developed countries. Some economists maintain that the

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[1/] For a definition of the measure used here, as well as a discussion of alternative measures, see UNIDO, Changing Patterns, op. cit., pp.22-27.

[2/] A second conceptual matter was to give some precise meaning to the concept of an 'industry', a relatively specific definition was used which led to the identification of 79 different industries defined according to three- and four-digit SITC product categories.

TABLE SPEARMAN RANK CORRELATION COEFFICIENTS IN EXPORT PERFORMANCE INDICES OF SEVENTY-NINE INDUSTRIES , 1966-7 and 1975-6[a/]

Pairi	1966-7	1975-6
Newly dustrializing countries - Industrialized countries	-0.271*	-0.349*
Newly dustrializing countries - Other developing countries	0.596	0.597
Newly dustrializing countries - Recently developed countries	0.431	0.517
Othe veloping countries - Recently developed countries	0.512	0.717
Indu alized countries - Recently developed countries	-0.247*	-0.275*
Indu alized countries - Other developed countries	-0.245*	-0.306*

Sour Compiled from United Nations, Commodity Trade Statistics, Series D, various issues, and other United Nations publications.

Not a/ Calculations were based on two-year averages for exports and imports. For a definition of the export performance index, see UNIDO, Changing Patterns of Trade in World Industry (United Nations publication, Sales no.E.82.II.B.1) p. 23 - 25.

* An asterisk indicates statistical significance at the 5 per cent level. All other values are significant at the 1 per cent level.

composition of a country's exports changes in a sequential fashion as development proceeds. They argue that a country begins by exporting goods requiring simple production techniques and large amounts of cheap, unskilled labour. As the skilled labour force grows and wage rates rise, the country's comparative advantages are thought to shift into new product lines whose production requirements are more in line with these factor combinations. According to this interpretation, countries move along a scale of comparative advantage. Asian countries are often used as an example. A case in point is Japan whose comparative advantage has shifted towards capital-intensive exports and away from goods requiring unskilled or even skilled labour. In turn, countries with adequate supplies of human capital were expected to take the place of Japan in exporting the original products. Countries at lower levels of industrialization would supplant previous suppliers in the export of unskilled labour-intensive products.1/

Significantly, the results in table 7 provide little support for this interpretation. The correlation of export performance in the RDCs, NICs and other developing countries shows a pattern that is similar and became more so over time. The only divergent trend was in the comparison of the industrialized countries with each of the other groups. The fact that the list of leading export industries in RDCs bears a closer relationship to that of Colombia, Egypt, India, the Philippines, Thailand, etc. than to countries like France or the UK suggests that industry in the peripheral European

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1/ This interpretation is closely associated with the work of Bela Balassa. See, for example, Balassa, "A stages approach to comparative advantage", paper presented to the Fifth World Congress of the International Economic Association, 29 August, 1977, Tokyo and subsequent publications by the same author.

economies poses no serious competitive threat to the 'industrialized centre'. Industries in developed countries that have attained a substantial degree of export success face no serious threat from competitors in other parts of the world. Instead, any competitive threat to these producers comes from potential exporters in other developed countries. The composition of world trade patterns, however, does pit the interests of high performance exporters outside this economic grouping against 'poor performance' industries in these countries.

Consumption Patterns for Industrial Products

Per capita levels of consumption of specific industrial products provide a useful means of gauging the extent to which a population's basic needs are being met. Such information, is, perhaps, most useful when it is compiled on a multi-country basis and therefore, may be used to draw comparisons between consumption levels in different countries. It is hoped that such studies would provide useful guides to policymakers at the country level since they serve to identify instances where levels of consumption are strikingly low in comparison with other countries.

UNIDO has recently completed an extensive compilation of data on apparent consumption[1/] for a total of 60 commodities and 70 countries. Using this data, the study provided information on consumption patterns throughout the period 1970-1978.[2/] Although level of income is usually the overriding determinant of the pattern

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[1/] Apparent consumption is defined to be domestic production plus imports less exports.

[2/] See UNIDO, Handbook of Industrial Statistics (United Nations publication, Sales no. E.82.II.B.2).

of consumption, a variety of other factors contribute to this diversity. In the case of certain food items, consumer preferences (in the form of dietary or cultural factors) sometimes exert an important influence on the pattern of consumption. Resource endowment is evidently another significant determinant of apparent consumption of those industrial intermediates that are not far removed from the raw material state. Examples include vegetable oils, raw sugar, cotton yarn and fabrics, wood pulp, petroleum products and non-ferrous metals. Finally, the size of the domestic market appears to be an important contributor to country differences in the case of intermediates such as industrial chemicals, iron and steel and non-ferrous metals.

The influence of these determinants - as well as the more general impact of substantial differences in purchasing power or per capita income - gives rise to the wide divergences in the consumption patterns of different countries. Table 8 summarizes the results for developing countries and developed market economies. For two reasons, the figures for developing countries are likely to be overestimates. First, negligible or non-existent levels of apparent consumption were excluded from the data and these invariably concerned only the developing countries. Second, the lack of consumption data was most pronounced in the case of the lower-income developing countries.[1/] Both statistical considerations would lead to an underestimation of the actual

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[1/] Negligible or non-existent levels of apparent consumption - implied by the corresponding absence of both domestic supply and imports - were frequently noted for the lower-income developing countries. This result was most common in the case of industrial intermediates and would be partially attributable to the lack of industrial processing facilities necessary to produce these commodities.

TABLE 8. PER CAPITA APPARENT CONSUMPTION[a] OF SELECTED COMMODITIES IN DEVELOPING COUNTRIES AND DEVELOPED MARKET ECONOMIES, 1976-1978

Commodity	Unit of measurement	Developing countries	Developed market economies
Beef and veal, fresh	kg	10.2	30.4
Milk and cream, dried or condensed	g	4,747.4	11,062.7
Butter and cheese	g	2,668.7	14,584.4
Vegetables, tinned or bottled; and fish, tinned	g	1,985.2	12,075.3
Margarine, imitation lard, etc.	g	2,371.6*	8,638.8
Flour, cereal	kg	40.1	71.2
Bread, bakery products, etc.	kg	9.4*	40.6
Sugar	kg	53.5	99.4
Prepared animal feeds	kg	32.5	229.0
Vegetable oils except soyabean and groundnutoils	kg	23.0*	36.2
Wool and cotton yarn	g	2,242.5	6,283.7
Cotton and woollen woven fabrics	g	1,100.8	3,765.7
Knitted fabrics	g	468.8*	1,700.6
Wood pulp, mechanical; pulp of fibres other than wood; and wood pulp, sulphate and soda	kg	9.5	176.3
Newsprint and other printing and writing paper	kg	4.0	52.5
Methanol	g	229.1	10,729.3
Chlorine, sulphuric acid, nitric acid, ammonia, caustic soda, and calcium carbide	kg	32.8	234.3
Dyestuffs, synthetic	g	90.5	581.5
Nitrogenous, phosphatic and potassic fertilizers	kg	15.4	68.4
Insecticides, fungicides	kg	1,035.1	2,278.1
Rubber, synthetic	g	461.4	6,221.8
Distillate and residual fuel oils	kg	260.8	1,394.6
Other ferro-alloys	kg	0.2	8.5
Wire rods	kg	5.2	32.3
Angles, shapes and sections	kg	11.2	78.1
Plates, medium and heavy	kg	11.6	58.6
Tubes, seamless and welded	kg	13.1	34.9
Steel castings and forgings	kg	0.4	7.3
Copper, refined unwrought	g	567.6	6,670.7
Aluminium, unwrought	g	553.0	14,617.6
Lead, refined, zinc, tin, unwrought	g	602.6	9,775.2

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[a] Figures are unweighted averages.

'consumption gap' between the two groups of countries.

With few exceptions the levels of per capita consumption in the developing countries were considerably lower than those recorded for developed market economies. This is particularly true for important industrial intermediates like pulp and paper, industrial chemicals, iron and steel and non-ferrous metals. In fact, the table shows only three instances where the developing countries' apparent consumption were equal to at least one-half the levels recorded in developed market economies: cereal flour, sugar and selected vegetable oils.

A significant feature of the multicountry comparisons is the wide variation in levels of consumption of a given commodity. In most cases the range of per capita consumption levels determined for the developing countries are less than the corresponding estimates for developed market economies. This feature suggests that the latter countries, by virtue of their higher incomes, are better able to satisfy national differences in tastes, preferences and industrial structure. Patterns of consumption in the developing countries are more severely affected by levels of income. Furthermore, during the 1970s, levels of per capita consumption also became more disparate among different developing countries; while consumption levels rose in some countries, they remained very low - and were unchanged - in many others. Resource-based commodities and food products revealed the widest differences in consumption levels, particularly for developing countries. The results of a more extensive investigation[1/] of the detailed estimates clearly reveal

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[1/] See UNIDO, Handbook of Industrial Statistics, op. cit., pp. 30-39 and country tables.

a wide number of instances where consumption of essential industrial products is minimal and suggests the need for industry-specific policies and actions to remedy the situation.

In conclusion, this paper has only briefly surveyed recent trends in a few, somewhat disparate fields of particular importance to industry. These have included (a) changes in the world industrial map and the resultant implications for international policy, (b) alterations in the composition of manufacturing output and the attendant implications for structural change, productivity and employment, (c) the relative importance of sources of growth, (d) changing patterns of comparative advantage and (e) consumption patterns in different countries. Each of these aspects carries a variety of policy implications and space does not permit a thorough analysis. However, what does emerge from this brief survey is the impression that the very basis for industrial advancement is undergoing certain profound changes which amount to a departure from previous experience. Thus, the need for a fresh approach to the development of industrial policies and strategies would not only be timely but indeed imperative if the developing countries' aspirations are to be realized.

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WORLD INDUSTRIAL DEVELOPMENT: DYNAMICS OF GROWTH THROUGH CO-OPERATION

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WORLD INDUSTRIAL DEVELOPMENT: DYNAMICS OF GROWTH THROUGH CO-OPERATION

1. The World Economy Today

The present state of the world economy has been characterized as the worst since the 1930s. It amounts to a definite and catastrophic break with that pattern of steady growth that had been observed since the early 1950s. The year 1973 spelt the first major break. Until that time the economies of both North and South had been growing at steady rates, of between four and six per cent for the developed countries, and even higher rates for the developing countries. After 1973 the pattern changed decisively, with a sharp fall in 1974 and 1975, a subsequent recovery, and then a sharp plunge in 1980 and 1981, to yield negative growth rates for both North and South in 1982. Although the developing countries survived the first recession in the North (in 1973) with remarkable resilience, they did not survive the second.

In recent months (as of March 1983) some signs of recovery have emerged, especially in the United States. But the strength of recovery appears uncertain, particularly because of policy makers' fear of rekindling inflation in the major industrial countries. The Northern countries have succeeded, in general, in bringing inflation down to single digits (now at 4-5% per annum). But for that achievement the North has paid an enormous price, in the form of a collapse in growth rates and 30 million unemployed. And although the present situation in the North is bad, it is even worse in the South. The decline in the growth rates of the North has been mirrored by an even steeper decline for the developing countries. Policy instruments adopted in the North to deal with the present situation affect the developing countries very severely. Policies of high interest rates discourage new investments in the South and make it more difficult for developing countries to service their trade deficits. Increased protectionism in the North makes it more difficult to expand exports of the developing countries, already severely depressed by the stagnant demand in developed countries. It is clear that there are few who gain, either in the North or the South, from the present position.

Manufacturing, in particular, has suffered. In the past the South has managed to achieve extremely high growth rates for this sector, but in 1980 it grew at only 3.1 per cent, in 1981 at -0.7 per cent and in 1982 at -2.3 per cent. Thus the developing countries' share of world manufacturing value added has now begun to decline.

2. Global Interdependence and Structural change

The world economy is a linked system, and to make use of interdependency in a positive way, the need for a global reflation policy is increasingly recognized. Any lasting improvement depends, however, not just on an expansionary monetary policy but a comprehensive restructuring policy, without which inflationary pressure will surely return. Restructuring policy requires the redeployment of high-cost (inefficient) industries from developed countries to developing countries where the output could be produced more cheaply: the developing countries should be allowed to combat inflation through greater efficiency. Only efficiency can lay the foundation for growth without inflation.

The present state of the world economy is due not to temporary shocks such as energy cost increases but to more fundamental processes: structural change and policies pursued to counter it rather than make use of it. If market rigidities and immobilities are removed, the world economy is once more oriented towards growth. Once such policies are implemented, it means that policy measures on the demand side can generate high growth without also bringing inflation. Only comprehensive and internationally co-ordinated action of this kind can effectively overcome the problems not just of the North but of the South also. For the realization of the aspirations of the developing countries for industrialization depends upon a harmonious and dynamic growth path for the world economy.

The Lima target summarizes the aim of a new world industrial structure by which the aspirations of developing countries can be fulfilled. It is expressed in terms of a share of the world's manufacturing value-added. But the target is not only, or even primarily a question of equity. The argument for it is also one of efficiency. It does not mean a redistribution of existing industrial capacity, but a distribution of new capacity. The industrialization of developing countries means, in general, new plant, new employment, and more goods and services. It is a process that benefits both North and South. A new pattern of world investment, directed towards achieving the Lima target, would mean that capital would be employed where it could produce the best results, i.e., in the developing countries, which at present suffer from an under-endowment of capital. The Lima target is based upon such a rational combination of policy measures, and not merely upon a continuous demand for resource transfers. Such policy action can replace the prevailing stagnation and protectionism and provide to the South its logical role in the global industrialization process. The growth path to the Lima target can invoke and sustain those forces of long run growth which have operated since the Industrial Revolution. The South offers a growth frontier to the global economy just as the American West did during the 18th and 19th centuries. It offers enormous scope for absorption of technology and employment of surplus labour. It contains a wealth of natural resource and investment opportunities, extensive potential consumer markets, and an abundance of initiative, incentive, and enterprise.

3. Scenarios of South-South Co-operation

3.1 The choices for the South

The Lima target was conceived in the spirit of the New International Economic Order. But the present climate of North-South relations is such as to make such goals appear difficult if not impossible of achievement. Even the International Development Strategy for the Third Development Decade (DDIII) adopted as recently as January 1981,1/ with its targets of, for instance, 7 per cent annual average growth in GDP for developing countries, already appears unrealistic. The protectionism and retrenchment brought about by the present economic climate appears far indeed from the policies of North-South co-operation called for in the Strategy.

What then can the South do? Clearly it is not enough to wait patiently for a revival in the North. Many developing countries are on the brink of severe economic and social crises engendered by the present combination of

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1/ A/RES/35/56, Annex.

high interest rates, protectionism and a fall in world demand. To many whose dependence is still on a few primary commodities, a revival in the North has little to offer but a return to old patterns of dependency.

For these reasons, South-South co-operation has become an increasingly important policy option for the developing countries. In the absence of co-operation from the North and of a real collective committment to the ideals of the New International Economic Order, the courses for the South must include consideration of how their collective strength can be utilized in their own interests and towards their own goals. The South, as has been said, can offer an enormous market and abundant resources both natural and human. Growing complementarities between the countries of the South mean that a new collective effort can provide the basis for an alternative development path. South-South co-operation, however, should not be regarded as a substitute for full North-South co-operation; they are not necessarily mutually exclusive propositions. Indeed, South-South co-operation could be regarded as a strategy to induce the North-South co-operation.

3.2 Scenarios of South-South co-operation

Here we discuss briefly some numerical results of scenarios of South-South co-operation. Using a computer model[2/] of the world economy, different policies of co-operation (North-South, South-South, and combinations of the South and individual regions of the North) were experimented with.

South-South co-operation has different interpretations. One might be a complete de-linking of the South from the North, as suggested by some radical political thinkers of the South. Simulation of this idea has some educational value; the assumption of zero trade and financial flows between the North and the South implies a catastrophe, with the result of both regions losing, a negative-sum-game. In the North, it is estimated that by 1990 GDP would be

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[2/] The UNITAD model was used. See, UNITAD Team "The UNITAD project: a world model to explore institutional changes over the long run", Industry and Development, No. 6, December 1981. United Nations, Sales No. E.81.II.B.4.

about 16 per cent below a "trend"[3] value, but in the South the drop would be over 30 per cent. Complete de-linking thus must be ruled out as an untenable strategy for the South.

A more moderate version of South-South co-operation assumed a delinking limited to a maximum of 30 per cent in trade, and a trade creation among developing countries by an equal percentage. A multiplier effect of the net changes in trade is then calculated. The scenario results in sizeable additional gains for the South and small losses for the North. In the South, GDP in 1990 is 8.2 per cent greater than the trend value, whereas in the North the loss in GDP resulting from trade diversion is about 2 per cent for 1990. If such de-linking is extended to become 50 per cent by 2000, the South's GDP would be 19.5 per cent greater than the trend value for the same year. Once again, the loss to the North would amount to only about 2 per cent. In absolute terms these changes nearly cancel out, giving a zero-sum-game for the whole world.

Self-sufficiency is enhanced in the manufacturing sector of the South by the co-operation scheme. Especially for capital goods, dependence on manufactured imports from the North is seen to decrease sharply over time and compared to trend. Correspondingly, intra-South production and trade increases the most in capital goods, above intermediate goods processing, light industry goods, food processing, and oil/coal processing, in that order. Interregional differences in the ranking suggest a broad pattern and magnitude of South-South co-operation, and the specialization suggested by the scenario is a confirmation of resource endowments. In short, the physical and economic potential for gains does exist, and increased co-operation among developing countries would be worth the effort.

At a regional level, it could be expected that Latin America could show an increase of 8.6 per cent in GDP over the trend value for 1990, if the pattern of South-South co-operation described above were to be followed. If this behaviour is extrapolated to the year 2000, then Latin America would see a gain of 15 per cent over its trend GDP value. The relative gains in manufacturing would be even greater, 12.7 per cent in 1990 and 17.4 in 2000. This growth would be associated in particular with light industry and primary processing, followed by capital goods and petrochemicals, with food processing growing slowest.

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[3] For comparitive purposes, a "trend" scenario was also constructed, to see the effects by 1990 of a resumption of old patterns of growth, but without any changes in international policy.

There seem therefore to be significant benefits to a strategy of South-South co-operation. Nevertheless, it must be remembered that South-South co-operation is not a substitute for, and is at most a second-best to, North-South co-operations along the proposals of DDIII. A scenario simulation of the latter yields a positive-sum-game result. The gain to the South would be 26.1 per cent higher than trend GDP in 1990, and the gain to the North would be 3.9 per cent. Unfortunately the prevailing political climate does not allow this positive-sum to be realized.

3.3 Regionalized North-South co-operation

The refusal of the North as a collective body to co-operate with the South does not necessarily imply that none of the component members will co-operate. Analysis of the politico-economic configurations of the North may lead to a conclusion that the fragmentation of the North and the heterogeneity in their relations with the South provides its own partial solution to the deadlocked North-South co-operation. North America, Western Europe, Eastern Europe, and Japan, may be unable to achieve collective action to restore the world economy. Nevertheless, it is possible to imagine that one developed region may individually explore co-operation with the South as a whole.

Accordingly, we now examine regionalized North-South co-operation scenarios. The assumption is that a Northern co-operator diverts up to 30 per cent of its existing trade away from other regions of the North towards the South. Thus the South and the developed region in the co-operation agreement form a new market. Given four developed regions, North America, Western Europe, Eastern Europe, and Japan, there are four alternative possibilities for regionalized co-operation. The developed region co-operating with the South will gain in every case, and the non-co-operating regions will lose. What is the extent of these potential gains and losses?

Simulation of the four possible scenarios shows that South-Western Europe co-operation yields the best gains for the co-operators followed by the South-North America, South-Japan, and South-Eastern Europe in that order. The first scenario has the following results. Western Europe shows its best performance with a 1990 GDP index of 102.8 (taking the value in the South-South scenario as 100). The excluded regions, North America, Eastern Europe, and Japan have their worst performances with index numbers of GDP at 96.8, 95.8 and 94.9 respectively. These results fully exemplify both the competitive relations between the four developed regions in their trade with the South, and also the magnitude and dispersion of Western Europe's trade relations, actual and potential, with the South. The gains accruing to the South are highest, with an index of 110.2, when co-operating with Western Europe, followed by South-North America at 104.2. Co-operation with Eastern Europe or Japan gives no significant gains for the South, under the special trade assumptions made for these scenarios, because for Eastern Europe the level of trade is small and approximately in balance and, for Japan, because although it is a significant importer of raw materials from the South, its export markets are concentrated in the North.

4. Some Dynamic Elements of South-South Co-operation

4.1 Capital goods

As in the South-South co-operation, it is always Capital Goods[4/] that is the fastest growing sector in the South as a whole under all four scenarios of regionalized South-North co-operation. This is true also for Latin America, except for the scheme of co-operation with Western Europe, where Basic Products is Latin America's fastest growing sector. Capital goods is a sector in which the Northern regions at present have an overwhelming dominance in international trade, and for its imports the South has been highly dependent upon the North. The new co-operation, which amounts to a switching away from traditional sources of supply, thus has the effect of stimulating production in a vital area, in which the South has at present an enormous deficit.

[4/] Capital Goods are here defined as ISIC (International Standard Industrial Classification) major groups 382, 383, 384, 385 and 390, i.e., including most industrial machinery and transport equipment.

The conventional economic wisdom has it that developing countries do better in production of labour intensive goods in small scale firms with unskilled or semi-skilled labour at best. Capital goods production requires capital intensity, large scale firms and high level skills. Hence, it is said, capital goods production is not suitable for developing countries in general. The small share of world capital goods production held by developing countries seems to support such reasoning.

But more careful examination of the past record in capital goods production and trade suggest the viability of the South. Many capital goods require a below-average capital intensity. Such capital goods include agricultural machinery, office machinery, metal-working machinery, ships and boats of various sizes. Small firms are as efficient as large firms in producing woodworking machinery, conveyors, dies, tools and jigs, etc. Small firms are often cost efficient due to firm-specific managerial quality, plant layout, and local information availability. Skill-intensive goods (i.e., those using a high level of skilled labour) are being produced by India, Pakistan, Egypt, Singapore, Argentina, the Republic of Korea, and other newly industrializing countries. Developing countries producing different capital goods can complement each other, should they adopt a policy to that effect. Indeed, the evidence is that capital goods production and trade among developing countries has grown faster than other manufacturing sectors. For instance, engines tripled and agricultural machinery doubled in export values (current prices) between 1975 and 1978, in all capital goods producing developing countries (except India and Singapore). Other categories with a particularly impressive export performance were special industrial machinery, other special machinery, electric power machinery, telecommunication, other electric machinery, road motor vehicles, and ships and boats.

The importance of capital goods production in the South is not just because of such static criteria as factor intensity, factory size, cost, etc. The dynamic effects of capital goods production, though difficult to measure, seem persuasive. The first is the efficiency-augmenting effect of "learning-by-doing". The capital goods sector can be said to be richest in such learning-by-doing benefits compared with any other manufacturing subsector. The sector is characterized by dynamic linkages with other sectors of the economy. It also provides the entrepreneurs for small technologically intensive industries. Furthermore, it can also stimulate skill creation, as well as demand creation through higher wages to skilled labourers.

4.2 Natural resource-based industries

Many natural resources are plentiful in the South, including petroleum, potash, phosphate, iron and other metals, and these form the basis of the important industries of refining and petrochemicals, fertilizers and metallurgy, respectively. The availability of the raw materials poses few problems, at least up to the year 2000, and reserve findings have more than kept up with consumption.

At present, excess capacity characterizes the world market in most of the processing sectors. But a closer examination reveals that the South imports a substantial amount of processed products from the North, despite existing excess capacity in the South. This is particularly true in petroleum refined products, petrochemicals of all sorts, and specific aluminium, copper and iron and steel products. This anomaly seems to be due to a market structure dominated by TNCs, and also to a lack of information among Southern actors (producers, consumers, and traders). Accordingly, to short-circuit the product flow, by direct transfers from Southern sources to Southern consumers, would seem an important area for South-South co-operation. The benefits of steady supplies in processed minerals and of trade and transport margins would then fall directly to the South.

More detailed possibilities for South-South co-operation can be found in the energy-intensive and capital-intensive mineral processing areas. The Middle East, for instance, could be a most significant economic force in such South-South co-operation, since this region has the energy resources, and capital funds needed in a field at present dominated by TNCs. Energy resources at present wasted in the form of gas flares and refinery residues could be used for smelting minerals from other regions, notably aluminum, copper, iron, etc. Such vertical integration, subregionally and interregionally, of key resources could provide added bargaining power to the South.

The constraints on South-South co-operation in mineral processing appear to be similar to those for capital goods. They include the availability of technical knowhow, the marketing infrastructure, financing, product qualities and the sharing of benefits among the participants. Therefore we next deal with some institutional changes that might facilitate South-South co-operation in general and these key sectors in particular.

4.3 The institutional framework of South-South co-operation

To make South-South co-operation a reality, the economic ideas have to be translated into specific action: information must be collected and exchanged, decisions made, agreements entered into. But the existing institutions seem inadequate. The capital goods sector shows this very clearly. Capital goods technology, information channels, marketing and trade arrangements, and even the financing such trade are all heavily concentrated in the hand of TNCs. The combination of powers in these crucial areas gives the present capital goods industry considerable bargaining strength with respect to the South. By contrast, the South is unorganized, fragmented, and without institutional support in furthering its own interests. It pays a high price in the form of opportunities foregone.

At present, in spite of excess capacity in virtually all the subsectors of capital goods and primary goods processing, and in spite of complementarities between different regions of the South in supply and demand patterns, no mutually beneficial exchange is taking place. How is this related to institutions? Two illustrations may answer the question. First, the buyers and sellers in the South are not directly linked. They operate through the Northern establishment of information channels and marketing arrangements. But direct and detailed information is crucial, particularly because capital goods are non-homogeneous. The South loses considerably in that a disproportionate sum, of trade and transport margins, goes to Northern actors when South-South trade is intermediated by the North. The control of information and marketing routes is, in general, not in the hands of Southern actors, and this is particularly so for capital goods and basic input goods.

A further important feature of the present institutional framework is finance. Financial institutions do not provide sufficient liquidity to facilitate trade among developing countries themselves. The existing financial institutions are constrained by United States dollar availability, which is, naturally, determined by United States monetary policy. Current recession and unemployment levels illustrate how expensive it is, particularly for the South, to conduct trade based on dollars. Distress sales (often below cost) in raw material markets are just one symptom. The problem of financing trade in capital goods and processed basic goods is only a part of the larger problem of liquidity shortage afflicting all sectors of the world economy.

These considerations compel us to discuss the institutional reforms in more general terms than the scope delimited by a narrowly-defined industry-oriented issue. The problem of world liquidity is of course primarily the concern of the International Monetary Fund, but it infringes on UNIDO's concerns so long as the shortage of liquidity constrains industrial growth. We consider, therefore, the possibilities of a general solution addressed not only to industry-specific problems in finance but also to associated problems in a broader frameowrk. The two are often operationally unseparable.

Altogether, we examine, in the remainder of this paper, a number of institutional innovations directed towards enhanced South-South co-operation, and these are as follows: (1) South-South negotiations of joint ventures; (2) system of general trading organizations; (3) national currencies as a medium of exchange; (4) South-South co-operation in industrial input management: (a) mineral stabilization plans (b) technology centres.

4.4 South-South joint ventures

As has been said, the concept of South-South co-operation in industrial production is based on the fact that individual developing countries are constrained by smallness of the market on the demand side and a lack of complementary input factors on the supply side. Co-operative schemes would bring together complementary input factors from other co-operating countries so that a production unit could be made complete. South-South joint ventures (SJVs) , owned and managed by the South, can provide the best means of realizing such objectives, and, in particular, the production constraints found in the capital goods and mineral processing sectors could best be overcome by SJVs. This form of co-operation seems far superior to customs union approaches and other forms of market integration schemes.

How can reciprocity be ensued in such joint ventures, and, again, how can their benefits reach as many developing countries as possible? One approach would be for countries to prepare a list of joint ventures that they are willing to host. The availability of specific resources such as raw materials, skills, and know-how would provide the basis on which the list could be drawn up. The host country would invite other developing countries to bid on this offer of complementary factors and expected returns. Negotiations would involve many items including an equity ownership, technical assistance, provision of capital funds, marketing underwriting, long-term purchases, barter arrangements, tariff preferences etc. The main objective is to maximize such exchanges and to achieve a fair distribution of benefits, which in the past has proved to be a problem in many co-operation schemes. In these negotiations UNIDO's System of Consultation might be used to provide preliminary services, and thus the scope of the present system would be expanded to intersectoral issues.

Another variant of production co-operation could apply the economic principle of willingness to pay. Thus, either a specific industry or a whole related complex of vertically integrated industries would become part of a scheme of industrial licences for Southern countries as a whole. Among the potentially interested countries, the highest bidder would be given the licence to establish those industries either in his own country or in a country of his choice by mutual agreement. The revenue collected from such a licensing arrangement would to to a common industrial fund for the South, which would become self-financing through the industrialization process. Such a licensing system would thus ensure an automatic contribution by the highest bidder country in exchange for the privilege of a wider market for its product, created by an elimination of tariff and non-tariff bariers in the South. Thus, national self-interest and collective interests could be reconciled.

4.5 General trading organizations

General trading organizations for developing countries offer considerable scope for South-South co-operation, especially in industrialization. UNCTAD has already given extensive consideration to the possibilities for such organizations. Institutional factors tending to inhibit South-South trade expansion include: uneven and biased information and marketing networks, inadequate communication, transportation, banking and insurance systems, medium of exchange constraints, and tariff and non-tariff barriers. Reduction or elimination of these obstacles is crucial to reduce search costs and transaction costs at present insurmountable for many traders in developing countries. As a means to overcome them, the establishment of General Trading Organizations is recommended. The basic idea finds a reflection in the Japanese General Trading Companies, which have succeded in linking domestic industrial firms to overseas buyers and sellers. The companies sell a package of information and commercial services to them tailored to their needs. If each developing country could establish such General Trading Organizations (private or state owned) and develop a regional and inter-regional network with a collective system of information gathering, such a system could meet the need for "catalytic actors" and "problem solvers", identified in many studies as missing links.

4.6 Local currencies as a medium of exchange

Developing countries have a chronic need for foreign exchange to facilitate trade transactions. The scarcity of U.S. dollars often blocks potentially beneficial South-South trade owing to balance of payments difficulties. As a means of overcoming such difficulties, the settlement of international transactions in local currencies is one important option. The advantages of this arrangement are many. It means the elimination of transaction costs in finance, i.e., the fees paid to foreign exchange dealers and the interest foregone (or paid on loans) to keep adequate reserves for transactions and creditworthiness. The risks and uncertainties of exchange rate fluctuations caused by "hot money flows" can also be avoided, and the burden of correcting trade imbalance would be equalized between surplus and deficit countries. Such arrangements would be flexible in as much as the proportion of local currency payments can be agreed upon, ranging from a moderate percentage to one hundred per cent. Such an approach would be a temporary measure, its object being to bring about a rapid increase in world aggregate demand from its present depressed level. The best long-term solution is still a global, multilateral, clearing-house arrangement, a world currency. However, the use of local currencies would reverse sacrifices of production, trade, and growth at present forced upon the South by the existing financial institutions. The

General Trading Organization suggested above may be in the best position to initiate the use of local currencies as a medium of exchange.

4.7 South-South co-operation in industrial input management: oil and minerals

Traditionally, crucial inputs to industrial sectors of the South have been supplied by the North including petroleum products, processed mineral products, technological know-how, or industrial services. Strategies to strengthen the collective self-reliance of the South could take many different forms. For oil, this could perhaps by charging the same international price, but allowing oil-importing Southern countries to pay a part of their oil bill in local currencies. This scheme would tend to encourage both South-South trade and financial co-operation.

Both in the case of oil and in the case of some other mineral resources (e.g. tin, bauxite) with large deposits in the South, the vast financial surplus of the low-absorber OPEC countries could be used to buy future claims on these minerals' output, keeping them under ground for the present. This would avoid or at least postpone all logistical problems of storage, transport and marketing. OPEC's surplus could thus be more imaginatively used to enhance its international market power, and non-OPEC developing countries would gain in terms of assured future markets and perhaps also in terms of prices higher than their present collapsed levels.

Such long-term "futures contracts" claims on oil and other significant exhaustible minerals in the non-OPEC South, that can be purchased with the OPEC liquid surplus, will produce a far more favourable climate for industrialization of the South. It will allow the South to have better control over international raw material prices and physical location of raw materials. At present, there is immediate pressure on most Southern countries to earn foreign exchange by selling such raw materials, no matter what the international price may be. Such long-term contracts would provide the essential time-horizon for industrial planning in the South, allow developing countries to process and increase "value-added" from their minerals. Collective as well as national selfreliance would be enhanced.

4.8 South-South co-operation in industrial input management: technology

Along with the management of minerals and their products, future oriented management of technology for the South appear crucial for self-reliance of the South, especially the new wave of technological development in, e.g., micro-electronics, biotechnology and information technology. International research and training centres based on co-operation among the countries of the South should be set up in these areas. Such centres would emphasize basic research and training, so that the indigenous technological capability of the South can increase over time. At the same time they would at least partly reverse the "brain-drain" from the South. Without such concerted efforts, the Third World will become helpless observers of new and emerging technologies, as reported in the International Forum on Technology Advances held in Tbilisi, 12-16 April 1983.

The way out of the South's technological dependence must include the development of a technological capability in all production stages in terms of design and actual production capacity. Industrial design centres should also be initiated through South-South co-operation on an imaginative basis. They should not be just "narrow" designing centres for developing blue prints for technology, but instead have a wider perspective of design as an integrated techno-economic process: each product-design would be looked upon as a vertically integrated industrial process involving at least all the major manufacturing production stages (of all developing countries, not just domestic stages). "Process" and not "product" substitution is the key to technological self-reliance for the South.

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STRENGTHENING OF SCIENTIFIC AND TECHNOLOGICAL CAPACITIES FOR INDUSTRIAL DEVELOPMENT IN THE DEVELOPING COUNTRIES

This paper was prepared by Dr. I.H. Abdel-Rahman, as consultant to the UNIDO Secretariat.

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FOREWORD

As part of the preparatory activities for the Fourth General Conference of UNIDO (UNIDO IV), a high-level expert group meeting on industrial development strategies and policies for developing countries is being organized in Lima, Peru, from 18 to 22 April 1983.

This particular meeting is considered to be of crucial importance to the preparations of UNIDO IV, since it has as its objective the review of strategies and policies of the past as well as the identification of key elements in industrial strategies and policies for the 1980s as perceived by national policy makers. On this basis, the meeting will identify those issues on which further detailed work in the strategies and policies area should proceed in preparation for UNIDO IV.

This paper focuses on the technological issues connected with the formulation of strategies and policies for industrialization. The paper was prepared by Dr. I.H. Abdel-Rahman, as consultant to the UNIDO Secretariat.

Summary

The advanced countries have established their technological capacities for industrialisation in a long period of time as compared with the limited time perspective available to the developing countries, which have to start from an initial fragmented base, and in conditions of severe constraints. Inspite of the current economic and social crises of the world economy, positive prospects are almost certain for technological innovation in different industries using new technologies to meet more severe competition in world markets. Major programs of technology innovation are established in almost all of the industrialised countries. Their impact on the industries and technologies of the developing countries will be increasingly felt in the coming years.

The developing countries, would have to examine and strengthen their technological capacity for innovations in industry to face the coming flow and benefit from newly created opportunities. The most urgent requirement is to examine the functioning of technology innovation, and gear the technological capacities to interlock dynamically with industrial development, using both external and domestic technologies. The most serious gap in the chain of functions and

institutions of technology machinery in the developing countries, is the consultancy and advisory services, which assist micro-and macro level projects and policies, making use of all the scientific and technical skills available in the country, and build up relatively quickly a body of experience and guidance for further measures of strengthening selectively the scientific and technological base in the country, in the directions indicated by the development strategies. It is argued that such an approach is both feasible and urgent. Hence it should be given cereful attention and high priority. Other measures will be required, including expanding the financial resources allocated to science and technology, and establishing a well thought of policy of transfer of technology. Precedence should however be given to the integration task indicated in the study, otherwise the efficiency of the technological capacity will remain low and its future development doubtful.

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STRENGTHENING OF SCIENTIFIC AND TECHNOLOGICAL CAPACITIES FOR INDUSTRIAL DEVELOPMENT IN THE DEVELOPING COUNTRIES

1- The Vienna Programme of Action on Science and Technology for Development:

In August 1979 The United Nations Conference on science and technology for development, adopted a comprehensive set of recommendations, known since then by the name of "The Vienna programme". This document is of permanent value as a guide and compilation of the variety of desirable actions at the national regional and international levels, to strengthen the science and technology capacities of the developing countries and to restructure the existing pattern of international scientific and technological relations for cooperation and transfer of technology. The programme contains also a set of recommendations for the activities of the United Nations system in this field.

In this study, the Vienna Programme, and the subsequent deliberations about it in the United Nations bodies and outside them, are considered as an essential basic and background informations. The study concentrates on the field of manufacturing industry whenever such concentration in meaningful. It also recognises that the developing countries, in their diversity of economic and social conditions and levels of industrialization, must establish their own policies and actions in this respect. They cannot and need not attempt to adopt all the recommendations of the Vienna Programme in the same time. By the nature of limited social and economic resources, the progress of the developing countries would have to take place gradually in a dynamic manner and within the limits of available resources and existing constraints. Therefore special attention will be given to examine the dynamism of the movements towards benefiting from science and technology for industrialization. The several steps already taken in a particular country may leave behind them situation of disequibibrium and ineffectiveness. The remedies will not always need additional resources. Harmonisation of different components of a general plan for application of science and technology to development may lead to quick improvements and establish a solid base for further progress.

In the following pages an attempt will be made, to help identifying the key deficiencies in the structure and working of the technological capacity of the developing countries. While all parts of the machinery require strengthening, it is essential to give priority to strengthening the weak(or in fact the missing) links, and to ensure the working of the machinery as a whole, before sinking resources to strengthening **some** components, which remain isolated unproductive entities on the national scene.

2. The Topology of technological capacity:

Technological innovations are continuously necessary to establish new industrial production facilities or to improve the productivity of existing units. The ultimate objective of the innovation resides at the production point, but the capacity to examine alternative technologies has to be built at many points, and institutions and cannot be established in a short time, or designed only for a specific problem or branch. Many components enter in the building of technological capacities, starting from the educational system, the industrial and technological research institutes, the advisory and consultancy services, the design experimentation,testing and analysis centres and project preparations, evaluation and feasibility studies. The technological capacity depends also upon the establishment of appropriate programmes of research and development, and availability of information about alternative technologies. Institutions and mechanisms are required to identify problems and difficulties in production so as to seek technological solutions for them, and in addition develop technological knowledge and ideas into full practical applications.

This extensive field of coverage, can only be activated by decisions at different points and by different operators. Other than technological content, these decisions involve financial as well as management and organisational aspects. The financial burden, in the final analysis is borne by the consumer of the industrial products. Actual financial payments take place at all of the above mentioned components, according to a variety of rules and regulations. For example, the cost of education in most of the countries is shared between the individuals and the public budget. Industry may offer fellowships and study funds for specific purposes. This is however a minor contribution. On the other hand, the technological research and development institutions gain income from services given to customers through contracts, in addition to a share received from public funds and central research and promotion institutions. Advisory services and consultancy activities have a variety of public and private forms. They are financed usually by project promoters, including banks and capital shareholders. Financial institutions in their turn establish their own advisory services, or secure the services of specialists for specific tasks along the successive stages of project examination and evaluation. Once an industrial project is approved by the relevant promoters and its financing is arranged, detailed engineering designs are made, bids are requested for construction and for delivery of equipment. In all of these stages, industrial advisory services of varying types have to be provided.

Information will be always wanted about wages, prices, taxes, public policies of credit, licensing, trade, employment, distribution and development in general. Future estimates of these data will normally enter into the feasibility studies, and in the subsequent adjustments during the life time of project.

In all of the above aspects, technological elements, are raised and decisions are made, by the variety of operators in the long chain of steps of macro-and micro industrial development activities. The national technological acapacity is therfore the sum total of all that is required to proceed along the successive steps of building of industrial capacity and its management.

In the majority of developing countries, not all of the above requirements are available domestically. Hence the need to get the missing services from outside. The degree of dependence on external sources varies from country to country, and from one branch of industry to another. Technological sources are frequently closely associated with the relevant sources of finance, or with the suppliers of equipment and holders of know how.

Even in the frequent cases of (importing) technology, a domestic technological capacity must be built to select and negotiate, and possibly later adapt and implement, the technological innovations. The domestic technology machinery will be required to advise the decision makers. It should call upon and make use of the domestic experts and technologists who exist in the country. In large projects, the decision makers seek additionally the advise of foreign consultants of wide experience and high reputation. As will be explained later in detail, the link between decision makers of industrial development on the one hand, and the domestic experts in universities and technological institution on the other hand is perhaps the weakest link in the long chain of technological activities in the developing countries.

3- Who Decides about Technological Innovation and Who Pays:

The technology machinery in its wide diversity of components, institutions and functions is closely related and interwoven with those who decide about industrial development, and with those who pay to finance that development. The two can become one party, when the owner of the industry is the one to finance it. In most cases, these are two parties, each of whom has priorities and policies different from the other. In many developing countries, the public sector by choice or by necessity assumes an important role(even exclusive or dominant) in developing certain branches of modern and basic industry. Yet in many of these cases, external finances from private, bilateral or multilateral sources is invited to participate as a donor, a lender, or as equity capital.Technologists(together with planners and economists)have to answer the questions raised by the sources of finance and by the promoters and owners of the projects. Many of the required answers depend directly or indirectly on public policies. A government need to harmonize carefully different public policies, including industrial policies and programs of industrialization. This harmonization is not as easy to attain, as it may seem in the first instance. Public policies serve a number of objectives, some of them may be contradictory. In the case of private industries, financing is usually sought partially from the banks, the financial institutions and the open capital market, where it exists. Foreign interests may participate both as investors, promotors or suppliers of equipment. Each one of these operators studies the project proposals by itself, using its own technology consultants and finally negotiate to reach an agreement. Some of the most active industrial development organizations have been established by large banks. Specialized industrial development banks are formed to finance mostly medium and smaller industries.

Some industrial branches, such as textiles, food industries and building material industries are relatively more developed in the developing countries than capital goods industries, electronics and science based industries. Technology institutions are likely to get formed first in the former industries.

As a part of general development policies in developing countries education facilities are financed to a large extent by public funds. Technological services related to specific industrial projects, are financed from the project funds made available by the promoters of the project. In the middle ground between these two end points, a number of technological institutions must be available to link technology information and knowhow to the actual production facilities. These intermediate institutions draw their manpower and experties both from the academia and from industry. They specialise in techniques rather than in projects and their services are essential for completing the chain of technological capacity in the country Some of those intermediate institutions, such as those of standards, specifications, information, patents and industrial property, essaying and testing are financed partially from public funds. Professional associations and guilds(generally not so strong in developing countries)are interested in developing and monitoring codes of conduct of some of these intermediaries. But by and large, these important institutions fall between the two chairs of public finances and project finances. This explains why they lag behind in the developing countries, so that the required services need to be imported from external sources at high costs. More damaging however is the breaking of the chain of components of the technology capacity of the developing country and the loss of its dynamism of industrialization and innovation.

4. National Development Plans and Export Industries:

Two notable and welcome exceptions to this general situation exist. When a country establishes medium term national plans of comprehensive social and economic development, an inventory is obtained of large scale projects intended for financing of infrastructure, irrigation, housing, power, agriculture and industry. The size of the requirements for these projects, justifies the building up of design and engineering offices for common materials such as cement, fertilizers, power stations, heavy chemicals, steel and other basic commodities. The engineering offices established gain experience in actual implementation of large industrial projects in the different branches. They can then call on the services and expertise of university and technological institutes and with the help of external partners, develop their own engineering and advisory services. They can then extend their activities to regional and international projects. They find it to their interest to support research studies, and training related to their field of industry, and thus help to create an integrated and effective domestic technology capacity in the branch concerned. These initial offices assume frequently the structure of a limited company and support a number of auxiliary services of great importance. Some of them are becoming well recognised internationally.

When a developing country expands its exports of manufactured goods, the producing domestic factories raise their efficiency to meet international standards and competition. They develop strict quality control measures, product designs for specific markets, and dynamic innovations to keep their place in the world markets. Export industries thus stimulate a number of technological activities, especially as the manufactured exports shift from textiles and consumer goods towards machinery, chemicals and electrical equipment, and thus establish a strong base of capital goods production.

Military industries, may have similar prospects. They seek technology capacity first to manufacture munition and light spare parts. They build relatively large repair and maintenance workshops, and proceed towards the assembly, design and manufacture of complete units. Military factories have been the training ground for industrial mangement in many developing countries. They have usually a certain spill over to civilian industry and technology. The funds are easily made available to them, hence their better prospects for training and innovation.

These are a few examples, where integrated technological systems with good capacity for innovation, have been established. They are drawn from the experience of large and relatively advanced developing countries. We may however look now at the general situation of technology in the developing countries as a whole.

Levels of Technology capacity and innovation

The endogenous technology capacity in the developing countries, is most likely to be lagging behind the technological innovation, which takes place actually in the economy. Both of course lag still more behind the (desirable) technology innovation level which is feasible and ought to be reached. The technology shortcoming meant here is both quantitative and qualitative. Though it is difficult to produce numerical and tangible evidence to quantify and specify the above two statements, there is general agreement about their validity as a whole.

We may reflect briefly about the above mentioned three levels namely, the indogenous technology capacity, the actual technology innovation and application, and lastly the desirable technological level. The difference between the first two is filled presumably by technology acquired from external sources The cost of such acquistion may be considerable, especially since in many instances the (returns) from such acquisition are reduced by economic constraints, such as the size of the domestic market or restrictions on exports of products in which the technology is used to third parties. The returns may be also limited by the lack of appropriate adaptation and application. These limiting factors, can however be considered components of the shortcomings of local technology capacity in negotiating for transfer of technology.

The gap between actual technological innovation (using mostly foreign technology) and the feasible and desirable levels, is more difficult to define. Two aspects in this regard can be identified. The first is the judgement that the innovation that takes place is not fully in harmony with the proper priorities of the developing country concerned. This type of divergence is sometimes exagerated to the extent as to claim that most imported technology is value loaded against the interests of the recipient countries, and takes place to realise benefits to its sources in the advanced countries, in collusion with a limited minority of collaborators in the recipient countries. Suitable mechanisms of technology screening and licensing will be always required to guard against unfair technological agreements. The transfer of technology in its variety of forms will continue to be important to all countries, including the industrially advanced countries. The developing countries should build self reliance in technology but not isolation.

The second aspect, is the likely existence of technology externally which should and could be acquired and implemented domestically but does not come available either for lack of knowledge about it, or lack of interest and capacity of the mechanisms,policies and institutions of transfer of technology. This shortcoming may apply both to new (break through) technologies, as well as to well established technologies already applied in the advanced countries. The solution in this case may be found in building a stronger domestic capacity of selecting and application of external technologies, including the streamlining of the functions of transfer mechanisms, especially as regards the institutional policy and economic obstacles to innovation.

These remarks are of particular importance, in examining the policies and programs of developing the domestic technological capacities of the developing countries. These capacities should be designed to handle adequately the above mentioned cases, as well as to devise (new) original technological innovations. The structure and programmes of technology development should be designed with due regard to the relative importance of and need for these different aspects of technology tasks.

Integrating Technological Capacity Components:

From the practical point of view, the developing countries need to establish a focus to think about such problems and reach recommendations, which may be submitted to the interested parties (both public and private) for consideration and possible adoption and implementation. What comes out of such a (focus) may be the bases of what may be called a coherent and harmonious technology policy for the country.

In the market economy industrially advanced countries, the functions required by an explicit technology policy, are usually performed by a variety of foci , in the government, in the research and advanced study institutions, in business and industry, in the military research, and in the open international market of technology. The actions of these varied mechanisms balances the one against the other. Decisions are made against risks taken by seemingly independent operators, who are subjected finally to market signals, and to central public policies in major questions. In the centrally planned economies, the planning machinery, either directly or through branch and regional decentralized units assume these functions, within the frame of a set of central policy directions. The price and market mechanisms have in this case an important though considerably limited role as compared with the case of the market economies. These are only schematic features of the situation of technology policy identification and application in the advanced countries. In reality, in practice, considerable degrees of variations exist in both groups of countries, especially as regards the explicit and implicit consultations between public policy and industry and business in general.

In the developing countries, economic systems, and levels of industrialization differ considerably. Hence the considerable variations in the institutionsand procedures used in identifying and applying technological innovations. Yet a number of common features exist amongst the developing countries in this respect. The first is the relatively recent history and limited size of industrialization. The long history of well established industry and the large size of such industries in the advanced countries, afford a strong and useful base for development. Channels of interaction between science and technology on the one hand, and business and industry on other hand, would have been established and can be further strengthened. Industrial activities are supported by skilled labour force through an adjusted education system, training and skill development procedures and institutions.

Long periods of political independence and international cooperation preclude sensitivities and unfair bargaining with external operators. Public policies have built experience and capacity for adjustment in widely different situations of technology selection and application. The developing countries, especially in recent years, face a number of complicated pressures of security, political, social, financial and economic nature. These difficulties should however spur them to be more attentive to the requirements of benefiting fully from domestic and external technology for industrialization. With these variety of pressures, and the relatively quick pace of technological innovation internationally, the need is more urgent for building up the experience to identify and review the different measures required, both on the short run and long run to benefit to the greatest degree from the technology potential.

As indicated above, the hoped for improvements may have the following three objectives:-

a) Strengthening the domestic technological capacity for original technology creation, and also handling problems related to technology transfer.

b) examining the technological innovation, that have taken place recently, and develop recommendation to ensure their harmonisation with national interests and coordination with development policies and strategies.

c) Identifying the technology potential both from domestic and external sources, and recommending measures and policies to realise this potential.

7- Industrial dynamism and technology innovation:

Since manufacturing industry is one of the most dynamic sectors, innovation and technology development is continuously required for industrialization under all diverse circumstances and in a variety of forms. These include innovations in processes, product design and specifications, new production technologies, better selection of equipment, and raw materials, savings in energy, environmental protection, labour skill development, management techniques, market and consumer studies, project planning for new investments and introduction of new technologies to maintain and develop comparative advantage and competetiveness. These are some of the important functions and objectives of the dynamism required for industrialisation in general and specifically for the developing countries. The procedure of buying equipment and introducing imported technology in the industry of the developing countries, without the establishment of the capacity for dynamism and innovation as outlined above, would render newly established factories and products obsolete in a few years time, with the consequent loss of capital, employment and income.

Unfortunately those responsible for establishing individual industrial facilities, do not accept the responsibilities for establishing the capacity for technological dynamism and innovation. Industrial financing, at the project level, expects that the economy as a whole somehow will provide the physical infrastructure such as power, water, transport and other facilities. They expect that the economy and society will build up the skilled labour force, including the technological higher skills. They, not unreasonably refuse to assume the costs for these human and physical capacities, though they are generally in a position to attract the best elements of the available stock of trained personnel. Hence the costs of technology, specially imported technology are paid at the level of projects without however building up and developing the integrated domestic technology capacity. Hence the opinion mentioned above that the importation of technology without maintaining industrial dynamism perpetuates the dependence on external sources and does not allow domestic technological capacities to be built up. Public policy has to recognise the need to remedy the situation by stimulating and promoting the establishment of an integrated technological domestic capacity, which may be organised and financed by industry and public funds according to the specific circumstances of each country. It is only in this way that industrial dynamism is created and maintained.

8- The Missing links between the separate technology capacity Components:

The main two historical approaches to the development of science and technology in the developing countries are those through the education system and through the government central services. Scientific research developed in conjunction with higher education and post graduate studies. University staff are generally required to conduct research in addition to the teaching duties. The qualified university staff form the elite of scientific personnel in the country, who are related closer to the outside scientific community than to the domestic business and development circles. Considering the large number of specialisations in University departments, the qualified scientists there are distributed thinly, and hence are not capable easily to form integrated schools of creative research of relevance to development requirements.

The building of modern state functions, require a number of analysis and control activities, in connection with security economic and general development. Chemical laboratories, testing and essay functions, land survey and legal transactions, procurement and tenders, are early nuclei of scientific and technological activities which may be supplemented by irrigation and water control, forestry and agriculture research and extension, or geological and minerological surveys, as the case may be in the early stages of economic development in different countries. Again in this approach, the type of scientific knowledge and routine activities is not directly related to business and industrialisation.

At a later stage, additional approaches are initiated for developing technology centers in the developing countries. Foreign technology is introduced through development projects in the public and private sectors. These usually create a demand for higher skills, but do not readily form an integrated base for local technological capacities. At a certain stage research and testing laboratories are established mostly by public funds to study problems closely related to domestic conditions. The model used in many countries is that of (national) research centers, which were developed mostly after the First World War in many advanced countries. In Commonwealth developing countries the model of "the department of scientific and industrial research" is generally followed. National laboratories, under different names and for specific fields such as physical, chemical and medical research became important features in the map of science and technology in recent decades in many developing countries. In these establishments science in the academic and university sense existed next to engineering studies, material testing and to a much lesser extent, industrial design and innovation.

Universities, government scientific units, and national technology institutions, however were not able easily to link with industry and business. Industrial development projects had therefore to keep resorting to external sources of technology.

9- Consultancy and advisory services:

Consulting services needed for major development projects, as well as those required by modern industrial enterprises in the developing countries were almost totally secured from external sources, and in many cases, provided by the suppliers of equipment or finance, with practically no participation from local counterparts. The limited domestic qualified staff dispersed in university departments, government laboratories, and national research centers, at best found a minor role with the foreign consultants mostly as individuals and not as institutions. In civil engineering and construction, local consultanty and design capacities were able to reach adequate levels earlier, than in mechanical, electrical, chemical and electronic branches of industry. Many efforts were exerted to establish competent consultant offices within public departments, but with limited success in general, especially as regards industrial technology, which continued to be heavily dependent on outside sources. Technology choices are usually determined for industrial projects in the early stage of project preparation and design and can be modified only to a limited extent in the later stages of project evaluation, financing and implementation. In the absence of competent domestic consultants, which is the weakest link in many developing countries, industrial technology became determined almost totally by external sources, with very limited participation of the domestic engineering and industrial skills dispersed between different institutes concerned originally with education, control and formal research. This dependence in itself became a retarding factor and an obstacle to the efforts to build up the domestic competent industrial consultancy capacity.

In the absence of strong domestic industrial consultant capacities, the choice of technology in industrial projects took place in many instances without due attention to the interest at the national level or without adequate technical and economic feasibility examination.

The creation of domestic consultant capactiy in itself is not a sufficient guarantee for avoiding common pitfalls of industrialisation in developing countries. In certain cases, rules are established to force international consultants to work in the developing countries with local partners, without ensuring that those partners are really qualified and active.

The result would be the creation of (front) or sham partnerships, which constitute only a financial burden on the real operators, and the cost of which is simply added to the final payments. Foreign consultants in their own interest need however to search for local support in order to reduce their costs, use efficiently local manpower and materials, and become familiar with the working conditions and regulations. In cases of genuine partnerships, domestic counterparts can be of real technical and mangerial help. If consultancy contracts are drawn carefully and open bidding is used according to clearly formulated terms of reference, irregular practices can be much reduced.

10. Backward linking of advisory services

The emerging domestic advisory capacity in a developing country should link backward with national scientific and technological institutes, and further with public scientific and technical departments, and with the universities and the science establishment in general. This linkage is necessary to supply the technological design and consultancy mechinery with qualified staff and also with specialized services of testing, chemical and material testing standardisation and specification, data, and the highly sophisticated research and scientific examination of specific problems and process. In certain cases, some of research and scientific institutes themselves assume counsultancy functions, in addition to their normal (research) functions. Some university departments organize and encourage their qualified staff in science engineering architecture, agriculture, economics and mangement to undertake consultancy work whether individually or institutionally. The many activities known as university-industry linkages are only one form of such relations. It has been a long accepted tradition to allow medical staff in universities schools of medicine and public hospitals to open private clinics outside their normal official working duties. This practice which has many positive and negative aspects, is spreading to other fields of specialization such as accountancy, law practice mangement, construction and also science and engineering. The balancing between public and private considerations in these types of multiple activities is a very important and delicate matter. Professional associations and syndicates, together with governments do examine continously many aspects of these relations including the need to ensure professional competence and integrity on the one hand, and the need to avoid monopolistic tendencies and closed shop practices on the other hand. In most cases institutional links between consultancy organizations and scientific and technological centers are preferable to individualistic links. The problems connected with this subject vary from country to country and according to the varying branches and specializations. Codes of practice and conduct, in addition to laws and regulations will be always necessary to protect public interest and also the private interests of the technologists and their clients. In the industrialised countries long years of experience, trials and errors, have helped to create "traditions and not only rules in such matters. In the developing countries, the pace of change, or at least the appreciation for the need of change, is much greater. Public policy may proceed along the line of over-regulation, or along the opposite line of under-regulation of advisory functions. Continuous attention and experience would help eventually to create the required balance, avoid misconduct and malpractices and strengthen the capacity for technological advisory services in different fields.

While linkages and balances are necessary, they should not impair the basic functions of the different establishments. Universities, for example have their important role in higher education and research, which should be maintained. National research centers, and public technical control laboratories have their important duties in their fields of interest and responsibilities. These specific functions also should be maintained and strengthened. No amount of expansion of universities and research institutes, however desirable, will fill the gap in the national technology capacity due to the limited consultancy and advisory services.

11. Forward Linking of Advisory Services

The consulting and technological centers need also to link themselves forward with business, finance and other development institutions. After all these are their clients. The financing system of industry and development varies from country to country and also according to branches, size of industrial establishment and levels of technology. Public sector financing is different in many respects from private sector financing. Equity financing is different from borrowing. Financing through banking system, insurance companies, corporate investors, is different than auto-financing and open capital market promotion. Financing of small industry is different than that of large industry.

Industrial project (generation) is an important and essential function in society. The starting signals for the project idea may come from the market place, in which shortage of certain products is conceived or from forward looking enterpreneurs who judge that dmenad will expand for certain products. The signals may come from a public authority as a result a concept and programme of industrialisation to increase supply of goods, to satisfy domestic or export demands, to develop basic industries or to replace imports and (save) foreign exchange. Banks and sources of finance can initiate ideas and seek enterpreneurs to invest their accumulated deposits, for which they pay interest to their clients. Scientists technologists, patent and know how holders may conceive application of their knowledge and seek interested promoters.

In all of these cases the project idea, wherever it starts, is handled successively and simultaneously by the enterpreneur on the one hand (whether public or private, national or foreigner) and the possible financing partners on the other hand. Technological consultancy services are required to be available independently to each one of the two sides. A bank or a minister of finance needs an advisor to give him preliminary assessment about the project, and to give advice and future details as study of project proceeds towards an economic and financing decision. The enterpreneur (including ministers of industry and of planning in the case of the public sector) needs also similar advice along the different stages. The advisory service required will contain an element of technology choice. It would include also and by necessity other elements such as markets, costs, labour, regulations, public policies, future prospects of profitability (in commercial and national sense) and organisational and mangement questions. In private business industrialisation, it is believed that the financing source decides very early on the technology choice. In public finances, technology choices may come much later, in certain instances as late as the last stages. Because of financing difficulties, bids for projects, request the bidder to offer both the technology choice and the foreign exchange component of financing. Equipment suppliers backed by export guarantees, offer the technology available in their equipment and no other. Transnational corporations have also their own preferences for technology. Competent technological advisory services (whether domestic or foreign) should help the decision maker in identifying the most appropriate technology. The development authorities, may need to balance between efficiency and financial feasibility, but they need to know the expert and honest opinions to reach a reasonable compromise. Competitive bidding for large projects, reveals many alternatives and possible combinations of technology and other factors. The analysis of bids is in itself no small task, that require special expertise, and so is the following negotiations. Specialised advisory services, from within the development authority or from outside is required in all of these stages. This is the area of forward linking,which is essential for the proper choice of technology and preparation of industrial development projects.

12. The Starting of Advisory Services

The consultancy and technological centers, if they have the adequate backward and forward linkages as outlined above, could in a relatively short time accumulate knowledge and experience, which would increase their competence quickly. They handle in all cases similar, if not identical, problems, and face repeated situations. What they acquire in one project could be helpful in the next especially if they narrow their area of competence to specific branches of industry, or specific stages of project development.

Continuity in this case pays well. Centers based on individuals and not on institutional forms risk having short life and usefullness. A central parmanent core, with access to a large number of individuals and institutions for specific tasks, seems to be the most appropriate structure for consultancy and technology advisory centers. Some of these centers take the form of (non-profit) organisations in certain advanced countries. Normal (company) form is more prevalent otherwise. Individual consultants, or individually based centers prevail in the developing countries. These individuals are usually university scientists, section chiefs in national research institutions, former managers of industrial enterprises, or former senior government officials in development departments. There is no set channels for the (formation) of a technology advisor. Established training institutions produce (scientists) rather than (technologists). Government activities produce bureaucrats rather than enterpreneurs. In the absence of an established technology advisory capacity, some form of a start will have to be made, by the development authorities, the financing authorities, or the scientific and professional community. Efforts to develop training and information facilities to prospective consultants would be highly recommendable. UNIDO, the World Bank, and major bilateral and multilateral agencies could contribute most effectively to the examination of these problems at relatively low cost and high returns to the developing countries.

13. Promotion of small industries

Because of their size technological services and requirements for small industries are handled differently. Small industrialists cannot engage the services of specialised consultants, and therefore institutions are established to promote and support small industrialists. The required support includes training facilities, advice on designs and equipment, repair and maintenance facilities, arrangements for financing and priorities for marketing products. Special legislations are enacted to assist small business(including small industries). Industrial estates are built and space is rented to small industrialists to save them the trouble of capital expenditures on buildings and infrastructures of power, water, transport and drainage. The system of industrial estates has been particularly successful in India and other Asian countries. The planning of industrialisations in developing countries, especially when the public sector has a prodominant role, neglect small industries in favour of relatively large industries. Small and large, industries are in fact interdependent. Large industries depend on small feeder industries. Small industries require intermediate products to process them into finished products. The technology for small industries requires in many cases special attention, hence the small industry promotion and training organisation, need to examine carefully traditional technologies and give the appropriate advice to the small industrialists to use modern technologies with the proper selection and adaptation as to size of operation, availability of materials, suitability to local marketing and relatively scarce high skills.

14. The International Systems of Transfer of Technology:

A lot of attention is assigned in international forums to systems and procedures of transfer of technology to the developing countries. The discussions include aspects related to the generation, selection and adaptation of modern technologies for use in developing countries, as to the conditions, costs and constraints of such transfers. These discussions relate naturally to(restricted)technology, though the developing countries, because of their limited information may not be making full use of(open)technology, nor of the immense technological and Unido scientific literature which is accessible internationally. The benefit to the developing country from technological negotiation and agreements does not depend only upon the conditions and costs of the transaction, but equally upon the degree of utilisation of the technology capacity acquired. The capacity of developing countries to benefit from external technologies require the training of a staff of economists, accountants engineers, lawyers and technologists in the varied aspects of technology assessment, selection, negotiations, bargaining, adaptation and application. The building of such a capacity, will stimulate technological studies and follow up and would lead to considerable improvements in the linking machanisms between industrialisation and technology, within the frame of economic and social policies. The discussions in these matters involve confidential information between the interested parties. Rules must be established to protect the interests of the negotiators, even if some of them are public sector enterprises.

15. Multiple Technologies Side by Side:

At any one time, a number of different technologies may be used simultaneously in the same country for the same type of production, and most of them may be equally efficient from the economic point of view, in spite of the wide variations which may exist between them technologically. The reason for this multiplicity of technologies is the differences due to other factors of production, including the capital costs of renewal and replacement of equipment and processes. An industrial production, introduced with a certain technology at one time, must maintain its economic viability at least for the life time of the equipment, Since new technologies are likely to be generated and offered year after year technological and other modifications must be examined and introduced, otherwise the competitiveness of the industrial process is impaired. As an extreme case, centuries old traditional technologies are maintained, because they continue to be appropriate when taken together with other factors such as labor , skills productivity, availability of capital, and the purchasing power of the local clients.

The introduction of modern equipment, or the sudden increase of the purchasing power of the clients(as in the case of ungained incomes), changes this equilibrium. A new combination of factors of production must be attained. Technologists, who recommend changes in the technology in use (whether traditional or modern) need to assure themselves of the likely realisation of new factor combination,otherwise the mere introduction of more modern technologies may not be successful. In other words, the penetration of new technologies in a certain society, can cause a series of disequilibrum (whether good or bad) and will only be economically feasible if new combinations of factors of production (in an appropriate time perspective) are realised. It is also possible that technological innovation may become necessary to regain equilibrium, caused by the changes that may have happened in other factors of production.

16. Technology for Development the Micro and Macro levels:

In the long run, technology is likely to be the leading factor of economic development. Stages of civilisation are recognised since historical times by the prevalent production technology. The same is equally true for recent decades in which technologies of energy, transport, communication and others charachetrize whole social patterns. However, at the microlevel, and in the short run, technology application is constrained, as explained above by other factors, which in their turn may be influenced by public policies and other social factors. The economic and social development, that takes place both by the public and private authorities, would be related to possible technological innovation in the short run and the micro-level, by considerations different from those in case of the macro and long term.

At the micro-level the mechanisms of research, experimentation problem solving, domestic technology application, project preparation, external technology selection, project negotiation and financing should function in harmony to improve the existing technology, introduce new technologies and explore the prospects of further application of technology for industrialisation.

At the macro level, policies of economic and social development, education, manpower and employment, are harmonised with technology potential to increase technological effectiveness.

There is no clear cut separation, between macro and micro levels, or between short term and long term aspects. Development of science and academic research is essential for education, but the trained staff contribute also to many technological activities. Technology research and development institutions develop expert knowledge in their fields of specialisation, and train experts in applied science and techniques of research and investigation. Their output is the basis, as a whole, of the technical knowledge used in design and advisory activities, though the institution as such may not be working directly in specific development projects. Innovation takes place ultimately in the production sector, but it can start at any one of several points and its idea passes through a variety of stages until it becomes ready for application. Development projects and problems have a technology component, but they can be resolved only if other factors of production are considered. Even the technology content of a development problem needs to be decomposed into separate components, each of which draws on a special technique or branch of knowledge. The final-solution may therfore be composed of a number of different recommendations.

The relations between social and economic development and technological potential are therefore quite complex, and have multiple aspects at the macro and micro-levels. A developing country, is not likely to be able to build its technological capacity in all branches, nor does it really need to do so. It is therefore important to be selective in using the limited human and financial resources available for science and technology. Imitative technology may be useful as a temporary stage until capacity for original technology is developed. Technology transfer is useful and necessary, where domestic experience does not exist, but it has to be selected, negotiated and implemented in a dynamic sense for each industry.

Staff, institutions and policies should be established to make this possible, in the particular areas corresponding to the industrial and development branches of the economy. Scientific and academic research is an integral part of University and higher education. By its association with education it is usually fragmented and not directed to specific development projects, yet it must be capable within limits to train staff and to afford the basis for more applied activities. National specialised centers are very useful to handle problems at the national level, and also to do contract research for industry. As one moves from the pure science, towards application in development projects, the areas of work of institutions and experts must become more specific and carfully chosen according to the specific problems of the industry Freedom of research which has to be maintained in Universities, gradually changes until one reaches confidential technology and industrial secrets at the production point.

With all this diversity, the different components of the technology capacity of a country must be integrated and linked with each other. Two requirements therefore are essential. The first is adequate resources, and the second is the proper (functioning) of the components of the technology capacity. These two requirements are not independent. Resources are likely to be more available from project funds, if the machinery renders the required services · The capacity to deliver and to function technologically will be more likely if resources are made available for it in a carefully designed and selective manner.

In this manner the technological requirements of the social and economic development projects and plans are met, either from domestic research, or from transfer of technology. The integrated dynamic technology capacity would adjust its activities selectively to the specific situation of each project and in harmony with national policies. The contribution of domestic research would increase gradually in selected and specific directions, and not simply across the board. The general proposals of streamlining and raising the technology capacity, would be further supported by regional and international programmes of information, science, technology, training, research and cooperation. The cooperation between developing countries in technology development and application will be stronger as a result of specialisation and accumulation of experiences. With the dynamically functioning technology-industrialisation machinery, both technology policy and industrialisation policies and strategies could be mutually harmonised and periodically adjusted.

17. The priority and feasibility of integrating the technological capacity in the developing countries:

Finally, the priority at the national level of allocating resources, though relatively small, to the efforts of integrating the technological capacity, may be examined. The current development, economic and social problems facing the industrialised and developing countries are well known. They create difficult financial demands and constraints practically in all countries. Technological innovation, at the international level, however has not been reduced. On the contrary, severe competition is felt in world markets and attention is increasing to maintain and develop exports of manufactured goods, and the introduction of the new basic technologies such as bio-technology and micro processors, Energy saving measures and environment protection programs also have stimulated technological innovations. Science and technology development is being supported generously in the advanced countries, may be much more than ever before. The final result is obviously, that the developing countries, will have to face the incoming flow of innovation from the advanced countries, some of its impacts may be unfavourable to the current industrial production, including exports. The industrialised countries, in their drive to innovate and maintain exports, and under conditions of unemployment and economic stagnation, may be more ready than before to support the export of capital goods and technology to the developing countries, especially where greater economic efficiency and better financial management are likely. The developing countries are becoming an expanding market for the exports of the advanced countries.

A strong and rationally planned movement to stream-line and strengthen the technological capacity of the developing countries for industrialisation, seems to be necessary timely and feasible. It should therefore be accorded a high priority in the development of strategies and policies of industrialisation. Once dynamism is created in the technology-industry relations, details of the required programmes, policies, training and institutions, become more specific and amenable to harmonsied decisions at different levels and components of the complex structure of development in the country. No doubt there will be many other aspects to be studied and strengthened, but it is felt that the most essential step is the integration and linking of the basic technology components.

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Industrial Development Strategies and Policies for Developing Countries

Lima, Peru, 18–22 April 1983

DEVELOPMENT IN THE DEVELOPING COUNTRIES IN THE 1980s

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FOREWORD

As part of the preparatory activities for the Fourth General Conference of UNIDO (UNIDO IV), a high-level expert group meeting on industrial development strategies and policies for developing countries is being organized in Lima, Peru, 18-22 April 1983.

This particular meeting is considered to be of crucial importance to the preparations of UNIDO IV, since it has as its objective the review of strategies and policies of the past as well as the identification of key elements in industrial strategies and policies for the 1980s and 1990s as perceived by national policy makers. On this basis, the meeting will identify those issues on which further detailed work in the strategies and policies area should proceed in preparation for UNIDO IV.

Development in the Developing Countries in the 1980s begins with an assessment of the results of the development of the industrial base in the developing countries at the beginning of the 1980s and then turns to a closer examination of development prospects for the African countries, looking first at the prospects for co-operation among the member countries of the United Nations Economic Commission for Africa during the 1980s, and then at the possibilities and prospects for the use by African countries of socialist industrialization theory and practice.

The paper was prepared by E.A. Bragina, M.A. Kyznetsova, E.V. Morozenskaja and O.B. Novikova.

ASSESSMENT OF THE RESULTS OF THE DEVELOPMENT OF THE INDUSTRIAL BASE IN THE DEVELOPING COUNTRIES AT THE BEGINNING OF THE 1980s

The development and modernization by the developing countries of their own industrial potential and the elimination of their backwardness in a whole number of major economic areas is a task which is essentially global in nature and the solution of which will contribute to the recovery of the international economic situation and the progress of all mankind. In terms of many indicators, the decade of the 1980s marks an important stage in the effort to solve the pressing problems of the developing countries.

There are several groups of factors at work in the industrial development strategy. Some of these factors have a mainly national impact, while the effect of others is global, but the most promising approach is the comprehensive one which combines these conditions. One might refer, in this connection, to the need for joint solutions to the problems in such areas as energy, the econogy, raw materials, and many others, solutions which in turn will exert a stimulating effect on the development of the world economy as a whole.

Industrialization as a generalizing concept and trend in the socio-economic policy of the developing countries is an important factor in their continued forward movement towards progress. The character of this process, along with its forms and methods, do not remain immutable or static, but are rather enriched by the experience of the developing countries themselves and those international organizations whoes mission it is to assist them in every possible way through their work. The content of industrial strategy is materially affected by the state of international relations, the position of the developing nations in the world economic system, and the thrust and essential features of scientific and technical progress.

Industrialization gives rise to complex, multi-variable processes in the developing countries. The internationalization of production, coupled with ever-increasing specialization, is responsible for the developing countries' accounting for an expanding share of the international distribution of labour, among other reasons because of the strengthening of their national industrial infrastructures. This decision by the majority of newly independent States to develop and expand an industrial sector of their own reflects their desire to move towards greater economic self-sufficiency and to achieve a more equitable status in world economic relations.

The developing countries see the growth of their national industries as being closely linked to the solution of a number of external economic problems, thus accentuating the global nature of industrialization. The formulation, under United Nations auspices, beginning in the 1960s, of ten-year development strategies which lay down in a general way the basic guidelines for growth in the young States, including the industrial sector, is a confirmation of the international character of the industrialization process. An important role in this new approach to the industrial development of the recently independent countries was played by the 1975 Lima Declaration, which established as a target the expansion of these nations' share of world industrial production to 25 per cent by the year 2000. This goal reflected both the new alignment of forces in the world arena and the increasing co-operation between the socialist and developing countries in the economic and political sphere, as well as the shifts occurring in the expansion of industry in the developing countries themselves.

The active role of the State in stimulating industrial construction and its direct involvement in the establishment of new production enterprises, mainly in heavy industry, was a contributing factor to industry's becoming the most dynamic branch of the economy. The high growth rates in this sector, especially in the 1960s and early 1970s (nearly double the growth rate in agriculture and in certain years climbing to 8-10% *per annum*) provided a basis for a substantial increase in the volume of national industrial production. From 1950 through 1980 this indicator rose by a factor of 6 or 7, among other reasons thanks to the creation of a number of new branches. The industrial sector's share of the gross domestic product increased from 25 per cent in 1960 to 33 per cent in 1980. Equally important factors were the diversification of production and the emerging structural shifts, particularly the change in the ratio between light and heavy industry brought about by the strengthening position of the latter. The highest growth rates in the 1970s were recorded in the basic sectors - iron and steel, petrochemistry, and, of particular importance, the engineering industries, this latter factor contributing to the establishment of a foundation for the development of national engineering industries. For a number of developing countries, these branches represent a new type of production. In addition, there were significant changes in the extraction industry, the importance of which increased as a result of the nationalization of the property of foreign private capital in a trend that was particularly widespread in the petroleum-exporting countries.

However, within the structure of industrial production the manufacture of the means of production on the basis of modern equipment and technology - the key to substantially higher labour productivity - accounted at the outset of the 1980s for only 25 per cent in the developing countries as opposed to 50 per cent in the capitalist countries of the West. This reflects the objective difficulties of mastering modern advances in science and technology that are being faced by the developing countries, the internal structure of whose industries is only just beginning to change under the effect of the introduction of capital-intensive production lines in place of the former labour-intensive operations. At the same time, worldwide industrial production standards are coming to be increasingly characterized by the use of production methods with a high "science content."

The encouraging results achieved by the basic group of developing countries in their efforts to industrialize have also revealed the enormous difficulties which lie on this path. Development based on the market model has led to an exacerbation of a number of negative factors. As the principal among these factors we might cite the increase in unemployment and semi-unemployment in developing nations with populations of hundreds of millions of people; deepening distributional inequality with only 10-12 per cent of the gross national product going to 40 per cent of the population; and the spread of mass poverty. In turn, this worsening social situation has impeded the further strengthening of these countries' economic independence. As the level of development rises, there is an increasing interrelatedness of economic and social processes, and this trend must be taken into account when formulating industrial policy.

The crisis affecting the world capitalist economy is exerting a profoundly negative effect on the economic situation of the developing countries. The alignment of these nations on external factors failed to produce tangible stimuli for sustained and steady industrial growth. The developing countries' share of world industrial production in 1981 amounted to a little more than 10 per cent. The external indebtedness of these countries, put at over 625 billion dollars, is a cause of serious concern. The increasing role of commercial bank loans, inflation, and the changing currency and financial policies of the industrially developed capitalist countries have led to a rise in interest rates that threatens the developing countries with even greater indebtedness in the future. The result is a limitation of the resources available to these countries for new industrial construction.

Towards the end of the 1970s the developing countries encountered increasing difficulties in selling their industrial products on the world capitalist market. The United States, Western Europe, and Japan strengthened their protectionist barriers against exports from the developing countries and introduced a host of non-tariff limitations. The slow-down in the growth of industrial exports is having a negative effect on the evolution of the entire economy. The exploitation of the natural resources of the developing nations by foreign capital is continuing.

Of major importance to the success of the industrialization policy is the fruitful co-operation of the developing States with the USSR and the other CMEA countries.[1] In the 1970s the growth rates in the CMEA countries were twice higher than in the developed capitalist States, their national income increasing on an average over the decade by 66 per cent and their gross production volume by 84 per cent.

In the area of trade in finished goods, the steady growth in imports from the newly independent countries to the CMEA countries stands in marked contrast to the protectionist policies of the West. As long ago as 1965 the Soviet Union abolished all duties on these imports. In 1982 the CMEA countries provided economic and technical assistance to 92 developing countries for the purpose of strengthening the public sector of their economies, developing their natural resources, and expanding the training of indigenous personnel. [2]

Despite the difficulties confronting the developing countries, it is timely and important to emphasize that industrialization remains a priority goal through which the problems of these countries can be solved, provided that it is pursued in a consistent and comprehensive manner. It is logical that particular aspects of this process and the specific forms of industrial policy can be examined in accordance with changing internal and external conditions. At the same time, however, there are inherent in industrial strategy certain factors which are of crucial importance.

Primary among these factors is the role of the State as the agent of development. It is under the aegis of the State that industrial policy is both formulated and implemented, and that the public sector in the most vital, "structure-forming" branches of the economy is strengthened. Unlike the private sector, the public sector can be guided in its activities not by the desire for maximum profit, but by broadly conceived socio-economic goals and the quest for more uniform and balanced development. An essential element providing a genuine prerequisite for the lessening of socio-economic disproportions is the decisive role of the State in the construction of vital infrastructural facilities and works and in the establishment and/or expansion of dynamic branches of industry in developing countries. In this way it is possible to plan appropriate ratios between industry and infrastructure at various stages in their evolution and strengthen the linkages between them, and also to introduce a definite element of planned regularity into the area of economic development.

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[1] See UNIDO/WG.357/7 and UNIDO/IS.335.

[2] See "MEiMO", 1983, No. 1, p. 105.

No less important is the role of the State in curbing the growth of social inequality. Among the measures that may be taken to this end, particular mention should be made of the effort to secure a uniform and equitable redistribution of national income, which includes an appropriate fiscal policy, effective and radical agrarian reform and the support of co-operatives, State control of prices and distribution, and a number of additional measures. The acute economic inequality that currently exists in many developing countries, and the associated effective demand, has the effect of distorting the branch structure of industry and leads to an underutilization of production capacity because of the emphasis on the production of goods and articles designed for the more affluent strata of the population. 1/ Capital, skilled labour, and modern equipment are all concentrated in this narrow sector of industry, at the same time that the broad masses of the population, particularly the rural population, are able to enjoy the fruits of industrialization to only a negligible degree.

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In the industrial policies of the 1980s an increasing importance will attach to measures designed to mitigate the most blatant disproportions in the national economies of the developing countries. This refers mainly to the ratio

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1/ According to UNIDO estimates, underutilization in developing countries is as high as 30 per cent of production capacity.

in the growth rates for agriculture and industry. The chronic backwardness of the agricultural sector, the increasing imports of cereal and other food products have accentuated the imbalances beteen the various branches of industry and have noticeably inhibited the development of industry.

It would appear that under these conditions the role of industry in establishing and expanding direct and reverse linkages with agriculture and in furthering the process of integration in the economy is especially vital. Today, the principal flow of goods between these sectors consists of agricultural raw materials and a number of consumer items. By increasing the share of goods for use in production, the technical endowment of the agricultural sector will be enhanced and a contribution made to increased agricultural production. No less important an aspect of industrial policy is the expansion of infrastructure construction for the agricultural sector, which has the simultaneous effect of generating new jobs, particularly outside of urban areas.

The acute unevenness of economic development and the presence of structural disproportions in the economy have led to greater social polarization and to mass unemployment and poverty in the developing countries. Increased employment as a means of ensuring at least a minimum livelihood for the broad masses of the population has rightly been awarded pride of place in the development strategy. Along with rural unemployment in its various manifestations, there is a rapid rise in urban, "overt," unemployment. In large measure this phenomenon is connected with the wide-spread retention in the industrial structure of small-scale production, including the informal sector. This raises the question of the possibility and need of applying various levels of technology, the multi-stage nature of the equipment introduced, and the coexistence within the industrial sector of modern means of production side by side with traditional tools of labour. The weaknesses of small-scale industrial production - limited technical sophistication, rudimentary technology, low worker skill levels and correspondingly poor product quality -lead to a lowering of production efficiency.

However, considering the pervasiveness of small-scale traditional production in developing countries and its role in providing employment and income for large segments of the population, measures to gradually modernize this category of production activity and to widen its links with the modern factory manufacturing sector represent an important aspect of industrial policy.

The experience of industrialization indicates that the heightened role of research and development in industrial policy is an objective factor the importance of which is destined to increase perceptibly in the decade of the 1980s.

The technological backwardness of the developing countries vis-à-vis the technically advanced countries (which, according to UNCTAD estimates, are ten times more advanced in this area, and in certain high-science areas far more) has resulted in the infusion of foreign capital in industrial construction, mainly in the form of deliveries of the latest technology, patent and licensing arrangements, and the introduction of modern production management methods. [1] This is one of the major reasons for the massive infiltration of the transnational corporations into the industry of the developing countries. This penetration by the transnationals is accelerating the ruin of small-scale enterprises in such areas as textiles, tobacco, soft drinks, and ready-to-wear clothing.

The business practices of the transnationals are leading to the predominance of incomplete production cycles in the industry of the developing countries and are increasing the dependence of these industries on imported means of production. There is every reason to believe that an industrial strategy for the 1980s must envisage measures to genuinely strengthen the control of the Governments of the developing countries over the activities of the transnational corporations and to regulate their participation in the area of industrial construction.

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[1] The developing countries currently account for not more than 1 per cent of all the technical patents issued throughout the world. Their annual payments for the use of various forms of technical services, patents, trademarks, etc. are in excess of 10 billion dollars; however, if all payments connected with their technical dependence are taken into account, the total sum is between 30 and 50 billion dollars (UNCTAD estimate for 1980).

The developing countries have achieved unquestionable successes in creating their own industrial potential. Nevertheless, the complexity of the industrialization process and the exacerbation of internal and, especially, external negative influences are impeding the establishment of a stable internal basis for sustained growth. This fact was clearly evident in the decline in annual industrial growth rates to 1-1.5 per cent in the late 1970s and early 1980s. To some degree, the downturn in industrial production was caused by the depletion of the extensive factors behind the expansion of national industry and the need for restructuring, the broad application of intensive forms of production,and the organization of the labour force.

However, because of objective factors a transition of this kind is prolonged in character. Meanwhile, the active effect of external factors - prime among them scientific and technical advances - aggravates the disparity between the level of world industrial production and that of the developing countries. In industry this disparity shows up more strikingly than in the other areas of the economy of the developing nations, since industry is more subject to the influence of scientific and technical innovations. The lack of funds, the shortage of skilled workers, and the inadequate levels of research and development are all factors that make it difficult for the developing countries to improve the quality of their industrial products and, accordingly, enhance their competitiveness.

The growing energy-intensiveness of industrial production (in the developing countries it accounts for 50 per cent of total energy consumption) has confronted the oil-importing countries not only with the problem of finding the money with which to pay for the increasingly costly import of fuels; it has also faced them with the no less urgent task of restructuring their industries to use other sources of energy in place of oil. Given their limited technical competence, their room for maneuver in this area is limited and their reliance on imported energy imposes real limits on the expansion of the national industrial base.

The difficulties connected with ensuring energy supplies may substantially inhibit the growth of industry in the basic group of developing countries, particularly in the heavy branches. Currently, these branches are responsible for 50 per cent of manufacturing output in the developing countries as opposed to 33 per cent in 1955. There is reason to believe that, in the course of their restructuring and modernization in the 1980s, this share will rise even further. A slow-down in the rate of production of the means of production may have a negative effect on industry as a whole inasmuch as it would limit the possibilities for technical redesign and new construction.

In these circumstances, increased importance attaches to a policy of industrial development that looks to the retention of high growth rates and the further restructuring of industry. We might note that the creation of an economically and socially viable industrial structure is no easy task. It is essential to take into consideration the experience of the developing countries in formulating and implementing industrial policy, along with the strengths and weaknesses of these policies. It is quite clear that, however much they may be needed, the use of technical-economic methods alone as a means of solving the problems of development is not enough. There is evidence that the failure to devote sufficient attention to social factors, the persistence of certain traditional forms of production, the specific effects of scientific and technical progress, and a number of other factors has limited the effectiveness of the industrialization strategy.

In connection with the discussion of the design and specifics of an industrial policy for the 1980s and beyond, we might note as a general comment that a sharp delimitation of the thrust of industrial policy is not always a constructive approach. Obviously, there is always a particular stress in the implementation of an industrial policy, but in this case the need for a more co-ordinated approach seems clear.

Industrialization in developing countries passes through fairly well defined stages which differ in terms of their specific tasks and the methods by which industrial production is to be encouraged. But these stages are closely linked, and - the main thing - there is a certain elasticity between them. For example, import substitution has made it possible to reduce imports of consumer goods and certain kinds of machinery by opening up local markets. This stage of industrialization has created objective preconditions for the export orientation of a number of branches, mainly by mastering the production of - for developing countries - new industrial goods. The limited extent of internal demand has also dictated the need for access to external markets.

The transition to an export-oriented policy has meant a significant change in the priorities of industrial development, with the result that it has been possible to accelerate the rates of economic growth and improve the effectiveness of public production. But export-oriented production has still remained an isolated form of development with weak direct and feedback links to the local economy. The promotion of the export of industrial goods, as noted in a UNIDO study (Doc. YD/269, page 87), contributes to the growth of production, provided that increased use is made of local resources, including products developed as a result of import substitution.

The establishment of proportions between import substitution and an export promotion policy as part of the task of strengthening and diversifying the local industrial potential depends to a decisive extent on the expansion of the State's organizational role and direct involvement in the creation of a number of industrial branches. The establishment of a complex of modern industrial production facilities and the expansion of State ownership in heavy industry provide a real basis for a certain regulation of structural shifts in industry and a way of affecting the speed and direction of the reproduction processes.

Equally essential in this connection would seem to be the role of the State in enhancing the effectiveness of national science and engineering and in assimilating and developing technology, with a view, inter alia, to local requirements. Although the developing countries have substantially increased their scientific and technical potential, their share in worldwide R and D is still negligible. Further efforts are needed both to expand research and development activities and especially to ensure that their results find application in the industry of the developing countries.

The expansion of the national R and D base and the introduction of scientific and technical innovations will make it possible to make better use of national science workers, who today are by no means always successful in finding an area in which to apply the education they have received, with the result that the economic potential of the country suffers accordingly.

The need for the State's regulatory involvement is no less felt in connection with the particular status of traditional small-scale industrial production and the acute problem of unemployment. Although the modern, structure-forming branches of industry play a leading role in ensuring growth rates, still the specific features in developing economies and the social factors at work in the developing countries require the retention of small-scale industrial production both as a means of supplying the internal market with consumer goods and of providing employment for millions of people.

The modernization and restructuring of the industry of the developing countries are further accentuating the irregular patterns of development: a single industrialization process may be characterized by the coexistence within it of extensive and intensive operations, small-scale and large-scale forms of production, and by the interaction of a great many economic sectors differing both in terms of the character and level of their development and in the forms of ownership specific to them. Under conditions of this kind, greater importance attaches to the co-ordinating role of the State and its direct intervention to control the mechanisms of industrial development and regulate the reproduction process. It appears that the industrial development strategy must accord greater attention to the problem of ensuring an effective national industry. The industrial potential created by the developing countries require the more extensive application of modern methods of industrial production management and organisation.

PROSPECTS FOR CO-OPERATION AMONG THE MEMBER COUNTRIES OF THE UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA DURING THE 1980s

Co-operation, and above all economic co-operation, among the newly independent African States is an important condition for success in their struggle to throw off the vestiges of their colonial past and to establish their economic independence. Particularly great importance attaches to this co-operation in the context of the efforts of the developing nations to restructure international economic relations.

An important role in the development of inter-African economic relations belongs to the United Nations Economic Commission for Africa (ECA). Established in 1958 under an ECOSOC resolution and currently grouping together all the 50 independent countries of Africa, from the outset of its work ECA has given priority attention to the problem of the economic co-operation of the countries of the continent in all its aspects. The Commission's active and consistent advocacy of the idea of inter-African co-operation and integration must be regarded as one of its major achievements, which has substantially contributed to the wide-spread incorporation of this concept in the national strategies of the African countries. Today, the development and strengthening of inter-African co-operation is a basic strategic premise for the Africa of the 1980s.

ECA is currently playing a leading role in organizing the process of the "economic convergence" of the member countries. It is conducting its work in this area along the following basic lines:

1. The identification of opportunities for inter-African co-operation and the formulation of recommendations aimed at developing it in various areas of the economy on both a bilateral and multilateral basis;
2. The establishment of an institutional mechanism to promote the development of mutual economic ties among the African countries;
3. Assistance in the preparation of programmes and in the implementation of specific multilateral co-operation projects, and also in the creation of new economic groups through technical and other kinds of assistance;
4. The creation of the organizational prerequisites for subregional co-operation among the African countries;
5. The co-ordination of the activities in Africa of the international economic organizations of the United Nations system in matters of technical assistance for co-operation and integration;

6. The promotion of mutually advantageous economic co-operation between the African and other developing countries.

Much fruitful work has been accomplished in all these areas.

The Commission's achievements have been particularly significant in the establishment of an institutional framework for co-operation. At this time, an extensive system has been established in Africa of intergovernmental organizations engaged in promoting economic co-operation among the African nations on the basis of bilateral and multilateral agreements. The continent has in current operation 18 economic groupings of an integrationist character (consisting of three or more countries) involving the majority of the independent African nations, some of which hold simultaneous membership of more than one grouping. Particularly great interest in the expansion of these integrationist ties is being shown by the so-called "least developed countries" (of which there are 21 in Africa). The ECA member countries co-operate within numerous pan-African economic institutions, such as the African Development Bank, the Association of African Banks, the African Railways Union, the Association for the Promotion of African Trade, and others (totalling more than 20), in specialized sub-regional organizations (e.g., the West African and East African rice-growing organizations and others), and in scores of bilateral commissions and committees on economic co-operation and associations of countries exporting and producing specific commodities (e.g., the inter-African organizations grouping together the producers of coffee, peanuts, wood, etc.). Specialized multilateral organizations exist to combat diseases of cattle and agricultural crops and to control the effects of agricultural pests, in addition to which there is a large variety of joint training and research centres (e.g., the African Training and Research Centre for Management and Development, the Association for the Promotion of the Development of Agricultural Science, the Institute for Economic Development and Planning, the Centre for Industrial Design and Research, and others).

In recent years, an increasingly conspicuous role in the implementation of these programmes of co-operation has begun to played by the special sub-regional centres, MULPOCs (Multinational Programming and Operational Centres), which the Economic Commission for Africa has established. Centres of this kind have been set up at the following cities: Yaoundé, Cameroon (servicing the countries of Central Africa: the Central African Republic, the Congo, Equatorial Guinea, Gabon, San Tome and Principe, Cameroon, and Chad); Gisenye, Rwanda (servicing the countries of the Great Lakes region: Burundi, Rwanda, and Zair); Niamey, Niger (servicing the West African countries: Benin, Cape Verde Islands, the Ivory Coast, Gambia, Ghana, Guinea, Guinea-Bissau, the Upper Volta, Liberia, Mali, Mauritania, Nigeria, Togo, Senegal, and Sierra Leone); Lusaka, Zambia servicing the Southeast African countries: Angola, Botswana, the Comoros. Djibuti, Ethiopia, Kenya, Lesotho, Malawi, Madagascar, Mauritius, the Seychelles, Somali, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe); Tangiers, Morocco (servicing the North African countries: Egypt, Libya, Tunisia, Algeria, and the Sudan).

ECA is paying increased attention to the work of the sub-regional centres, because it believes that in the 1980s they are to become the basic mechanism for intensifying co-operation among the member countries. In this connection, the principal tasks of the centres were formulated at ECA's 16th session (in 1981) as follows: (a) the co-ordination at the sub-regional level of national development plans and programmes and of programmes of assistance received both from international organizations and, bilaterally, from developed countries; (b) assistance in the formulation and implementation of multilateral projects in the area of economic and scientific-technical co-operation. It is also planned to hold periodically seminars on sub-regional co-operation under the aegis of the centres.

Since the beginning of the 1980s, ECA has been placing substantially greater emphasis on its work to develop co-operation between the African and the other developing countries. Studies have been prepared regarding the expansion of trade between Africa and Latin America and between Africa and Asia. The Commission has dispatched missions of experts to economic associations in Latin America for the purpose of studying the opportunities for trade co-operation, and has prepared for the Arab Bank for Economic Development in Africa (BADEA) a draft document on commercial co-operation between the African and Arab countries.

An additional factor contributing to the strengthening of regional co-operation among the member countries is the expansion of commercial contacts with the socialist countries (the preparation of a co-operation draft was begun in 1980) and with the capitalist States (within the framework of the European Economic Community and the countries of Africa, the Caribbean, and the Pacific).

The Commission has a major role to play in the formulation of a long-term programme for the development of inter-African co-operation. The first efforts in this direction date back to the early 1970s and resulted in the inclusion in the "African Declaration on Co-operation, Development, and Economic Independence", adopted by the Organization of African Unity at its tenth assembly, of a special section setting forth the basic principles and main directions of the economic convergence of the African countries. During the next decade, the Commission's member countries held repeated discussions, at many meetings and in many forums, of the problems of their mutual co-opration. The agreed recommendations and proposals worked out at these meetings contain a concrete programme of action to develop intra-regional co-operation and integration; this programme was adopted as an integral part of the Monrovia Strategy for the Development of Africa (1979) and the Lagos Plan of Action (1980). In its most complete form it is reflected in the Final Act of the 1982 session of the Conference of African Planners, Statisticians, and Demographers, "The Application of the Lagos Plan of Action".

As its strategic premise, the African programme for the development of intra-regional co-operation sets the task of creating, by the year 2000, an African Economic Community. This task is to be carried out in two stages. During the first ten years (1980-1990), the intention is to strengthen the existing commercial and economic groupings, followed by the creation of sub-regional communities; to intensify co-operation among African countries in the areas of agriculture, the achievement of food self-sufficiency, and the development of industry and of energy, transport, and communication systems; and finally to assist in the co-ordination of activities between the economic groupings for the purpose of creating an African Common Market. During the second stage, covering the next ten years (1990-2000), the measures taken to deepen pan-African co-operation and integration in individual sectors of the economy are to be continued, there is to be even greater co-ordination of national economic development plans, and assistance is to be given to the implementation of multinational projects in the industrial area.

In general terms, then, this is the programme for the development of mutual co-operation among the countries of the continent, a programme which is regarded as an essential instrument for the attainment of the objectives of the Lagos Plan of Action. It is a programme that distinctly reflects the African context and in which a regional focus has been brought to bear on the recommendations common to all the developing countries.

Co-operative programmes and projects are being designed for specific areas of the economy in conformity with the principles of the Lagos Plan of Action.

The ECA member countries attach major importance to the strengthening and expansion of economic co-operation in agriculture. The related problems were considered at the Fifth Conference of the Ministers of Economic Affairs, Finance, Planning and Development of the Commission's member countries, held in Rabat in 1979. That conference recommended to the African countries that they should pursue an integrated policy involving such objectives as the institution of socio-economic reforms in the countryside, the quest for self-sufficiency in agricultural commodities, the generation of additional employment and income for the rural population, the improvement of the trade network and infrastructure in rural areas, and others. The conferees emphasized the need for stepped-up joint actions by the African nations with a view to achieving the objectives of the "Regional Food Plan for Africa" which had been adopted in 1978 as a joint ECA-FAO initiative.

A long-range plan for the development of mutual trade and co-operation for the countries of West Africa for the 1980s has been prepared, which, if it is successfully carried out, might serve as a model for similar planning to embrace the entire region.

The most important area of economic co-operation among the African countries is in the production sector. In the light of the experience of previous years when the implementation of "industrialization programmes on a regional basis" was slowed by the inadequate level of national planning (specifically by the lack of adequately mature plans for the growth of industrial and agricultural production), insufficient co-ordination of these plans at the regional level, and the failure to solve the problem of the distribution of the advantages of co-operation, the member countries of the Commission have directed their efforts towards the formulation of inter-African entrepreneurial programmes and the design of comprehensive programmes for the development of particular regions of the continent. The regional industrialization strategy which the Commission has laid down for the period through the year 2000 envisages intergovernmental industrial co-operation, multinational projects, and also the establishment of pan-African institutes of an industrial nature.

All-embracing industrial collaboration schemes have been replaced by projects calling for limited co-operation in specific sectors through the setting up of African multinational enterprises. A number of conferences of ministers of industry of the countries of Africa, beginning in 1973, have dealt with the matter of identifying these sectors and the principal modalities and directions by and in which they are to be developed. For example, at their fifth conference, held in Addis Abeba in 1979, the African ministers of industry decided to promote on a preferential basis five basic sectors, namely: 1. the food and agriculture industry, 2. construction and the production of construction materials, 3. the engineering industry, 4. the metallurgical industry, and 5. the chemical industry.

Together with the increased exchange of raw materials between the African countries, the plans for the decade of the 1980s look to an activation of co-operation among the ECA member countries in the area of the industrial development of mineral resources. This question was the subject, in particular, of the first regional conference on the development and use of mineral resources, held in February 1981. That meeting adopted recommendations to the member countries to the effect that they should organize multinational raw material enterprises and speed the establishment of co-operative ties in the area of raw material processing. Preliminary searches have already been started for sources of financing, capital investment, and insurance for the companies operating in this sector, and the results of these inquiries will be presented at the next conference, which has been planned for 1983. It is planned that during the 1980s extensive studies will be conducted into the region's available reserves of mineral resources and the possibilities for their collective processing and use.

In recent years ECA has directed particular attention to the development of African energy resources. The member countries have been given assistance in the development, planning, and effective utilization of their energy resources, and there has been research into the development and use of new energy sources, such as solar power, geothermal energy, and natural gas. The Commission has taken the initiative in the creation of a Regional Centre for the Study and Development of Solar Energy.

As a general proposition, it is fair to say that the prospects for multinational industrialization during the 1980s and through the year 2000 are linked to the establishment by the African Governments of multinational corporations to develop and exploit the continent's enormous potential natural and industrial resources to the end of achieving national and collective self-reliance. This explains why the Commission is intensifying its efforts to create a mechanism for co-operation in the area of industrial development. Such previously established pan-African institutions as the Regional Centre for Industrial Design and Production, the Centre for the Adaptation and Introduction of Industrial Technology, and others are stepping up their activities, while preparations are going forward for the establishment of an African Iron and Steel Centre, a Regional Centre for Industrial Construction, an African Multinational Projects Centre, and a West African Centre for the Development of the Petroleum Industry. Of particular importance is the creation of the African Industrial Development Fund, in which a number of international organizations will participate side by side with the African countries.

The further growth of inter-African co-operation and the expansion of its scope depend in large measure on the setting up of integrated infrastructural systems of various kinds and on all levels - bilateral, sub-regional and pan-African. In recent years, the Commission's work to develop transport and communications has been co-ordinated through the decisions of the conferences of ministers of transport, communications, and planning of the African countries. At the second such conference, held in March 1981 and attended by the representatives of 43 African countries, the participants examined issues connected with the implementation of the first stage (1978-1983) of the ten-year programme for the development of transport and communications in Africa, together with the preparatory work on projects for the second stage (1984-1988). In a conference resolution the delegates placed particular stress on the need to design special transport and communications programmes for the land-locked and island countries and reaffirmed their preference for regional and sub-regional projects over the purely national approach.

The plan of action for the first stage of this ten-year programme calls for the construction of 771 facilities (or, according to other data, 389 transport and 156 communications projects), estimated at a total cost of 9 billion dollars. At the present time, an agreement providing for 6 billion dollars has been reached with the creditor countries. Currently, the principal pan-African transport projects involve the construction of five trans-African highways: the Trans-Saharan Highway (Algeria-Nigeria), the Trans-African Highway (Mombasa-Lagos), the Trans-Sahelian Highway (Dakar-N'jamena), the Trans-West-African Highway (Lagos-N'jamena), and thr Trans-East-African Highway (Cairo-Gaborone).

The ECA member countries are co-operating also within the framework of the African Civil Aviation Commission. This is an advisory body with responsibility for the co-ordinated development of African air transport.

Permanent and close links exist between the Commission and a number of sub-regional organizations engaged in the development of sea ports, such as the Port Authority Association of East Africa, the Port Authority Association of North Africa, and the Port Authority Association of West and Central Africa. Through their work, these associations all pursue identical goals, namely, the improvement, co-ordination, and standardization of port operations and the boosting of the effective volume of harbour work through improvements in equipment and the performance of port services.

As a result of the increased cost of liquid fuel, particular importance during the upcoming decade attaches to the co-operation of the ECA member countries in the area of rail transport. The Commission's recommendations underscore the urgency of accelerating the construction of new railroads, especially the connecting lines necessary for the completion of a unified continental rail network. The total length of the lines the construction of which has been recommended by 1988 is 15,600 km.

It is expected that the 1980s will see a rapid expansion of electric power systems on a regional scale. The first steps towards co-operation in this area among the ECA member countries have already been taken, the task now being to establish a unified electric power grid. Regional power projects, especially those carried out by the organizations responsible for the development of the continent's river and lake basins, must play a major role in this effort.

The member countries of the Economic Commission for Africa are also engaged in bringing into being a pan-African communications system. The largest project of this kind, currently nearing completion, is the Pan-African Telecommunications System (PANAFTEL), in the implementation of which the International Telecommunications Union (ITU) and the Organization of African Unity are playing a major role. This system consists of 24,000 km of communications channels and 18 relay centres.

Also planned for the decade of the 1980s is a substantial expansion of intra-regional trade. For the first session of the committee of African ministers of international trade and finance, which met in March 1981 in Addis Abeba, ECA prepared a draft programme of action on the expansion of intra-regional trade. The development of intra-African commerce as a condition for the continent's economic development and the establishment of an African Common Market was discussed at the second symposium of ECA member countries on the development of intra-continental trade.

In recent years, together with questions pertaining to the co-ordination of the production and trading of goods, increasing attention has been given to the establishment of an intra-African marketing system that would be free of the dominance of foreign monopolies. The existing associations of countries producing specific commodities, along with the State trading organizations of the countries in the region, can provide the basis for joint export sales institutes. In ECA's view, African marketing should develop primarily through the establishment of the appropriate multinational enterprises. There are also plans to set up specialized corporations designed to act as clearing houses or chambers of commerce and furnish the countries of the region with information on prices, profits, the distribution of markets, and freight carrying conditions. The basic objective of these corporations, which will be under the control of the member countries, will be to develop intra-African trade.

From the very outset of its activities, the Commission has been greatly concerned with the development of African co-operation in the currency area and in the area of credit and monetary transactions. This is in line with ECA's view that these areas are of critical importance to the effort to speed the processes of economic growth and ensure the successful outcome of the struggle for economic independence. The decade of the 1970s witnessed a considerable activation of co-operation in the currency and financial area, at a time when this co-operation was recognized as an essential tool in implementing the policy of self-sufficiency. An increasingly conspicuous role in the economic development of the countries of the region is being played by one of ECA's first "brainchildren" - the African Development Bank. Founded in 1966, the Bank has annually increased the number and average size of the loans it grants to the participating countries. The priority in the Bank's financing activities is accorded to those projects and programmes which meet the interests of more than one member State, and also those which contribute to the development of complementary economic structures in the member countries. The Bank maintains close contacts with the regional organizations of Africa and also with international organizations. Specifically, there is a joint OAU/ECA/ADB committee, whose tasks include the co-ordination of the work programmes of these three pan-African organizations. The Bank is taking steps to become even more active. For example, at the conference held in April 1981 on the expansion of the Bank's information activities, a decision was taken to establish regional branches in order to facilitate contacts on the part of African Governments with the Bank.

Considerable experience has been gained by another pan-African financial organization - the Association of African Central Banks, which groups together 27 national and two regional banking institutions. The Association's programme of work includes the development of sub-regional payment systems; the consolidation and expansion of the role of financial institutions in the mobilization of internal resources and the funding of expert studies and private capital investment; and participation in the solution of international currency problems. The emphasis in the 1980s will be on the study of problems connected with currency control, the unconvertibility of currencies, and the extension of foreign trade credit. The purpose of all these measures is to lessen the difficulties in the development of sub-regional trade caused by currency and financing problems. The Association has lent its assistance to the establishment of the African Centre for the Study of Currency Problems (1975), whose responsibilities include the preparation of recommendations on specific international currency problems and the formulation of a unified policy for the African countries in this area.

The outlook appears to be for an activation, during the next years of the decade, of the interventions of the regional central banks, the regional development banks, and the commercial banks as they increase the levels of their funding for intergovernmental co-operation among the African countries. This subject was at the centre of a meeting of the directors of West African regional and sub-regional development financing institutions which took place in Benin in 1981. Among those projects which have already been carried out with the help of the sub-regional financing system is the project for the integrated development of the telecommunications system in West Africa. Currently on the agenda is the question of joint funding for the establishment of a multinational maritime transport company and a highway construction project under the auspices of the Economic Community of West African States (ECOWAS), including the Nouakchott-N'jamena Trans-Sahelian motor road and the Nouakchott-Lagos coastal road, along with sub-regional projects in the agricultural area (a seed production and distribution centre, grain storage facilities, rural water supply systems, etc.).

A decision has been adopted to establish an Association of West African Banks for the purpose of intensifying co-operation among the countries of the sub-region, with particular emphasis on exchanges of information regarding the participants' practical activities. This association would also act as the intermediary between the West African banks and the Sub-Regional Committee of the Association of African Central Banks.

In additition to the growth in co-operation for the financing of regional and sub-regional projects, co-operation is also expanding in terms of the actual currency transactions of the ECA member countries. For example, under a decision adopted at a session of the Board of Directors of the Central Bank of the Central African Countries, a sub-regional currency market will begin to operate in the 1980s. Currency and financial co-operation is also being developed within the framework of other regional groupings (the East and West African development banks, the Mutual Assistance and Guarantee Fund under the Entente Council, the Fund for Co-operation, Compensation and Development of the Economic Community of West African States).

Since 1976 there has been in operation the Pan-African Insurance Company, which was founded by 42 African States and one of the principal objectives of which is to attract capital from national companies for investment in the African economy. The member countries have undertaken to pay 5 per cent of the revenue from their insurnce activities into the fund of this pan-African organization. The compay is to expand its activities in the years ahead. For example, in accordance wih a decision adopted at the organization's eighth conference, held in Lusaka, Zambia, in May 1981, a special committee has been set up to prepare action pogrammes in the area of agricultural insurance. Attention was also drawn to the need to do more in terms of training qualified insurance agents from amon national personnel. This pan-African company later served as the model forthe establishment, in 1978, of the Organization of East African Insurance Companes (participants: Zambia, Kenya, Madagascar, Mauritius, Malawi, Mozambique, Swaziland, and Tanzania). This organization concentrates its attention on the training of qualified personnel for the participating insurance companies, one of its initiatives having been the establishment of the Insurance Institute of East Africa in Nairobi, Kenya.

The ECA member countries are also directing increased attention to the broadening of scientific and technical co-operation among the countries of the region. The Commission's work programme for 1982-1983 places particular stress on the co-ordination of the scientific research conducted in the African countries and on the augmentation of assistance by the Commission to the scientific research organizations operating under its aegis. For the purpose of co-ordinating research in industrial technology on a regional scale, the African Centre for Industrial Design and Production was established in 1980.

Scientific and technical co-operation among the member countries of the Economic Commission for Africa is one of the most promising trends in their intra-regional co-operation efforts. Of great importance in this connection is the question of the joint training of personnel in various specialized disciplines and at various levels. Two large regional research and training centres are already operating successfully under the Commission's aegis - The African Training and Research Centre for Management and Development (Tangiers, Morocco) and the Institute of Economic Development and Planning (Dakar, Senegal).

The accelerating process of the economic convergence of the African States is an important reality in today's Africa. The reason for this progressive phenomenon lies in the need to speed the development of the productive forces of the countries of the continent so that they may achieve a position of parity in international economic relations.

POSSIBILITIES AND PROSPECTS FOR THE USE BY AFRICAN COUNTRIES OF SOCIALIST INDUSTRIALIZATION THEORY AND PRACTICE

The elimination of economic backwardness and success by the African States in their struggle for economic independence are impossible goals unless there is a sharp increase in labour productivity based on the development of industry and on the replacement of manual labour by machines. Industrialization is the key factor to the economic growth of the nations of the African continent. "It is only on the basis of industrial development that a restructuring of international economic relations can take place and the developing countries can be integrated into the new system of the international division of labour." 1/

The importance of industrialization to the socio-economic development of the African countries is recognized today by practically all the economic and political leaders of Africa and also by such international organizations as the Organization of African Unity (OAU) and the United Nations' Economic Commission for Africa (ECA). This is further evidenced by the fact that the ECA has proclaimed the 1980s as the African industrial development decade. To what degree is the Soviet experience applicable to the conditions of the developing States?

To begin with, let us consider how the very concept of industrialization is to be defined. There are various treatments of this process in the economic literature. For some writers it may be ultimately reduced to the development of manufacturing industry, others understand by it the emergence basically of heavy industry, while still others regard industrialization as the development of industry in opposition to agriculture. The Soviet economist N. S. Babintseva, taking her lead from Lenin's definition of industry in the broad sense of the word as production based on the social division of labour and the

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1/ 'Ekonomika nezavisimykh stran Afriki', Moscow, 1972, page 9.

use of machines and being of a commodity nature,[1] notes that industrialization should be understood as a particular period in the socio-economic development of a society during which a specific system of production based on the use of machines comes into being. "...industrialization is a system of all the technical and socio-economic changes (transformations) in social production as a result and on the basis of which one of the modes of production based on machine technology and the industrial organization of social production is developed."[2]

At the present time, this understanding of industrialization as a complex socio-economic phenomenon is also coming to be shared by a number of Western authors; for example, the French economist M. Humbert has emphasized that the industrial restructuring process must be viewed as an integral part of the transformation of society as a whole.[3]

Thus, industrialization is a socio-economic process that may be directed at two fundamentally different goals - the establishment of a capitalist or a socialist form of production. Depending on this essential factor, there may also be distinguished the two basic kinds of industrialization - capitalist or socialist.

Socialist industrialization, which relies on the advantages of the public ownership of the means of production, is able, as the experience of the Soviet Union demonstrates, to solve the problems of the restructuring of social production within, historically speaking, a brief period of time. The plan-based development of the economy and the concentration of capital investment in certain key areas of development makes it possible to use limited resources to maximum effect. During its industrialization period, the rate of accumulation in the USSR amounted to 26 - 29 per cent of national income. [1/] The effect of all these factors made it possible to achieve unprecedented growth rates. During the period 1928-1937, the mean-annual growth rate for national income in the Soviet Union was 16.5 per cent; during the period of the prewar five-year plans gross industrial production rose by a factor of 5, its mean-annual growth rate for the period 1928-1940 being 16.5 per cent, and for heavy industry - 20 per cent. [2/]

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[1] See V. I. Lenin. Polnoje Sobranije Sochinenij, Vol. 3, p. 309.

[2] N. S. Babintseva. Industrializatsija v razvivajushchikhsja stranakh. Moscow, 1982, p. 8.

[3] See M. Humbert. "L'industrialisation sous contraintes", Revue Tiers-Monde, Paris, No. 87, Vol. XXII, 1981, p. 520.

At the same time, in capitalist countries like the United States and Japan, where in comparison with other countries of the capitalist world economic growth proceeded at a fairly rapid pace, the maximum industrial growth rates during the restructuring period were 6-7 per cent and 8.5 per cent, respectively. [3/]

The situation in the African countries is completely different. In these countries, the economic base of the society is characterized by a state of transition and by the economic mix typical of this state. In the majority of these countries, a capitalist system of production is in the process of emerging, to the accompaniment of the integration of public production on the effective basis of State capitalism and foreign monopoly capital. Conversely, a certain number of nations have chosen the socialist approach, but here too it is still too early to speak of the emergence of socialist production relationships; at most, there is evidence of a gradual build-up of the necessary preconditions for the formation of such relationships and the establishment of progressive economic forms. In most African countries, the authority of the State is also in a period of transition, arising out of a coalition of the representatives of various classes, mainly the petite bourgeoisie and indigenous capitalists. An increasingly important role in the development of society is being played by

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[1/] V. I. Kuz'min. Istoricheskij opyt sovetskoj industrializatsii. Moscow, 1969, p. 132.

[2/] N. P. Shmelev. Problemy ekonomicheskogo rosta razvivajushchikhsja stran. Moscow, 1970, p. 37.

[3/] Ibidem, pp. 36-37.

what might be called the "bureaucratic bourgeoisie." Private ownership of the means of production is not only being preserved, but is actually expanding.

Although in the Soviet Union also, during the first years of the Soviet administration, a mixed economic system persisted (it has been described in detail in the works of V. I. Lenin), this mixed system differed radically from that which currently exists in the African States, primarily because in the USSR the socialist system predominated among the rest.

Therefore, in view of the absence of the necessary socio-economic preconditions, at the current stage there can hardly be any discussion of the total application by the African countries of Soviet industrialization experience. The importance of our country's example for the nations of the African continent resides in the fact that it provides living proof of the possibility in principle of achieving a rapid industrial restructuring of the economy and points the way towards such a restructuring, namely, through a socialist revolution aimed at the building of a socialist society. "Obviously, it would be incorrect," writes Doctor of Economic Sciences N. P. Shmelev, "to attempt any simple comparison of the contemporary problems of the developing countries with the specific methods which were used to solve similar problems in the Soviet Union during its period of industrialization. There can be no question of concrete prescriptions - the times today are in many ways different, as also different are the conditions and the opportunities. What is of genuinely great importance to the newly independent developing countries is the logic of development and the principles of that social system which has produced the most effective solution in world history to the problem of industrialization." 1/

There are in the economies of the African countries a number of characteristic features that distinguish them not only from the socialist countries,

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1/ N. P. Shmelev. Op. cit., pp. 46-47.

but also from the capitalist States, and which make it impossible to bring about their industrialization along classic capitalist lines. The Marxist-Leninist analysis of the phenomena of social life requires that attention be given to the whole range of factors affecting these phenomena, including such considerations as the historical age and the international situation. As long ago as when Germany and Japan began the industrial restructuring of their economies at the end of the 19th and beginning of the 20th centuries, industrialization involved certain particular characteristics linked to changes in the world capitalist system, to the transformation in the advanced capitalist States of free competition into monopolistic capitalism, and to the intensifying influence of external factors on the process of economic development. The further expansion of foreign trade, the export of capital, and the struggle among the imperialist powers to divide up the world between them - all these factors forced the Japanese and the Germans to industrialize at a rapid rate and with the powerful support of their governments.

From the very outset, the economic development of the African countries has been marked by the far more more considerable role of the external factor in all areas of socio-economic life than was at one time the case in today's industrially advanced countries. This is the result both of particular features of the present age and of the specific historical evolution of these countries.

At the present time, no one country can develop in isolation from the rest. National economies are becoming more interdependent, the socialization of production has crossed the frontiers of national economic entities, transnational corporations have appeared, integrationist processes are gaining momentum. The African countries are also affected by all these developments. In addition, however, these countries occupy a special, subordinate and unequal position in the system of world economic relations. In many instances they have inherited from their colonial past a one-sided monoculture orientation in their foreign trade along with an extraordinarily high degree of dependence on foreign capital. Another important consideration is the fact that the industrialization of the countries of Africa is taking place at a time when there has been a revolution in science and technology, when the science and engineering gap separating them from the advanced capitalist countries is widening rapidly, and when there is emerging a new form of dependence, namely, technological dependence.

All of these factors as they pertain to the African countries shape the specific way in which they are experiencing the industrialization process. On the one hand, these States must take into account the already established division of labour as the basis for their economic development, whereby nearly all of them have no choice but to resort to foreign capital for the industrial restructuring of their economies.

Under the conditions that prevail in the African countries, the State alone has the power to oppose the inroads of foreign capital and to mobilize the fairly sizable financial resources needed to meet the requirements of scientific and technical progress. Therefore, the role of the State in the industrialization of these countries is not simply a matter of creating favourable conditions for the operations of local private capital; rather, it is itself a major entrepreneur with an involvement in mixed enterprises operating with indigenous and foreign capital. In addition, efforts are being made to guide the process of reproduction from a single center, a fact reflected in the formulation of economic development plans.

The specific characteristics of the economic development of the African countries and the particular combination of internal and external factors are forcing African leaders to seek their own development strategy. It is important, in this connection, that this search should not lead to the creation of pseudoscientific theories emphasizing some kind of "African exclusivity" or to the emergence of concepts of so-called "national socialisms." It is well known that individual socio-economic systems develop on the basis of general objective laws, although these laws manifest themselves in a specific way in different countries at different times. The conscious use of mankind's accumulated valuable historical experience could greatly speed the process of the economic development of the African countries.

The thrust of their industrial policies and their desire to lessen their dependence of foreign capital is prompting the African States to turn their attention to the experience of the Soviet Union. Despite the fact that at this stage these countries cannot make full use of this experience in such areas as the socio-economic devlopment machinery, the sources of accumulation, and the pace of economic change, certain Soviet methods for the solution of economic problems in the light of specific national characteristics are in fact applicable in these nations. Without question, greater opportunities for the use of Soviet experience exist in those countries which have opted for the socialist model and whose number on the African continent is increasing with every year.

The theoretical premises of the Soviet industrialization model were developed by V. I. Lenin and later elaborated in detail in the works of Soviet economists written during the period when history's first long-term development plan - the plan of the State Commission for the Electrification of Russia - was under preparation. In the formulation of this plan, solutions were found to such basic questions as the ratio between the growth rates in the manufacture of the means of production and those in the production of consumer goods (social production subdivisions I and II), the selection of technology, the ratio between labour-intensive and capital-intensive growth alternatives, the problem of balanced versus unbalanced economic development, and the selection of the sectoral strategy of industrialization.

On the basis of the long-term interests of the country's economic growth and the preservation of economic independence, Soviet economists successfully argued that the production of capital goods (subdivision I) should proceed at a faster pace than the production of consumer goods (subdivision II). However, it was repeatedly emphasized in this connection that this accelerated production of the means of production (i.e., capital goods) was a temporary phenomenon required during the period of the country's industrial restructuring, and that the ultimate goal was the expansion of popular consumption. The forced development of heavy industry in subsequent years was explained, in addition to the purely economic reasons, by the complex international situation, the encirclement of the young Soviet republic by the imperialist powers, and by the need to strengthen the country's defense capability.

In opting for the capital-intensive approach to development, Soviet economists called for the combination of the massive use of only partially mechanized labour - workers operating out of their homes and small workshops - with a high level of funding in the key branches of the economy.

It will be remembered that the electric power sector was identified as one of these key branches in the plan of the State Commission for the Electrification of Russia (the so-called GOELRO Plan), although this branch was not the leader in terms of the volume of capital investment. As a so-called "integrating branch," it represented the basis on which the entire complex of branches, first in the heavy and then in the light industry was to be built.

During the initial years of Soviet governance, the economy of the USSR, it will be recalled, was characterized by a disruption of basic proportions and linkages. This critical situation was further aggravated by the consequences of the Civil War and acts of sabotage by reactionary elements. The imbalances were both horizontal (between the demand for and supply of finished products) and vertical (i.e., along the raw material - semifinished - finished product chain). Under these conditions, the GOELRO Plan adopted as its basis the vertical imbalance alternative involving the establishment of vertical linkages with a temporary disparity between the demand for finished products and their supply. This disparity was envisaged as applying primarily to consumer goods and, in particular, to luxury items.

In formulating their socio-economic development strategies, the African countries are faced with the task of solving what are in principle the same problems, and it is here that Soviet experience could obviously be of value to them.

It is symptomatic that these States are exhibiting increasing interest in non-market methods of economic management and are devising their own economic development plans. It is true, of course, that their planning does not have, nor can it, the force of official directives, nor does it cover all the country's various economic systems and modes of production, but its basis in the form of the State sector is expanding and gaining strength.

There can be no doubt but that the question as to the selection of the key, or "industrializing," branches must be solved in the light of the specific conditions of each of this group of countries - its economic basis of departure, its historical heritage, and its geographical realities. Indeed, the very notion of "leading branches" needs to be precisely defined at the present time, since as a concept it is subject to the changes brought about by advances in science and technology. In today's world, among the sectors entering the first rank of economic importance are the electric power, electronics, and chemical industries, while the iron and steel industry is losing ground.

The development of these sectors is by no means within the reach of all African countries. While Algeria and Nigeria, for example, are capable of creating through their own efforts nearly all the leading branches engaged in the manufacture of the means of production - the petroleum and petrochemistry industries, ferrous metallurgy, the cement industry, and others - for the majority of the African States this task, at least for the time being, lies outside their capabilities. For them, the rational approach is to focus their efforts on one or two sectors.

On African soil the concept of the priority branch has experienced a certain evolution and is even now continuing to be refined. A typical colonial and neocolonial strategem was to develop agriculture and a mining and extraction industry based on access to foreign markets. Later, import substitution by indigenous production gained wide acceptance. At the present time, the import-substituting branches in the African countries account for about 75 per cent of all value added by industry; these are mainly consumer goods. A recently popular trend has been a shift of emphasis to the export-oriented branches, requiring, however, a higher degree of processing of the raw material to be exported.

The experience of industrialization in the developing countries has shown that the development of these export-oriented sectors has no meaningful effects of the vestiges of colonialism. In addition, as real experience has shown, the development of these export-oriented sectors has no meaningful effect on the economies of the African countries, since it fails to contribute to the solution of such problems as the establishment of intersectoral linkages, the expansion of the internal market, the elimination of unemployment, and others. Against this background, there is emerging a new industrialization trend, namely, the development of so-called "structure-forming" branches or, as they are sometimes called, the "integration industries." This approach to industrial development has been given great attention in the African development strategy for the 1980s. "In Africa," writes L. I. Aleksandrovskaja, "there has arisen a new trend in industrial development - the promotion of integration industry. This approach includes the identification of certain basic (key) branches of industry capable of broadening and strengthening economic ties both within the industrial sector and between industry and agriculture. It looks to the expansion of the market within the national economies and to co-operation among the African countries. At the present stage, the basic task of integration industry is to absorb the largest possible volume of indigenous raw materials into the processing procedure." 1/

The fact that the question of an integrating industry has been raised is of itself of great importance in that it can be seen as evidence of an

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1/ Afrika v 70-e - 80-e gg. Stanovlenije natsional'noj ekonomiki i strategija razvitija. Moscow, 1980, p. 111.

effort to approach the national economy as a single economic complex. In determing which specific branches of the economy should be selected for their integrating effect, the Governments of the African countries might well refer to Soviet experience in solving the problem of ensuring balance in economic growth, with allowance for the fact that in these countries the establishment of vertical linkages in the economy is made more difficult because of the presence of a variety of socio-economic forms of production which are largely uninterrelated, and also because of the major role that precapitalist conditions continue to play in these nations.

There is much in common between the economic conditions from which the African countries are beginning their development and those which existed in the Soviet republics of the Trans-Caucasus and Central Asia at the beginning of the Soviet era. In the Central Asian republics, for example, the economy was primarily agricultural, with industrial goods imported from European Russia. In Azerbaidzhan, the only relatively developed sector was the petroleum extraction industry, which was controlled by foreign capital. Feudal and patriarchal relations predominated in agriculture.

In formulating its sectoral strategy of industrialization in these republic, Soviet planners adopted as the basis of their policies the division of labour that already existed there. Industrialization in Central Asia began with the creation of industry to produce the tools of production for the irrigation and land-improvement systems and for light industry and the food industry; it was only after this stage that new branches began to be added to the industrial complex. In Azerbaidzhan, the task of industrial restructuring proceeded basically through the development of the oil, oil refining, and chemical industries.

In studying the industrialization experience of the Soviet East, it is essential, however, not to lose sight of the fact that industrial development in these regions was an organic part of the industrialization process of the entire Soviet Union. A substantial portion of the capital invested in this devlopment was financed out of the central budget, while equipment and skilled workers were sent out from the more developed regions of the country. In addition, the Soviet republics of the Trans-Caucasus and Central Asia were not confronted with the task of creating a full range of industrial branches and sectors, since their national economies were being built as part of an overall scheme based on co-operation with the other Union republics.

Despite these differences, the African States can learn valuable lessons from the practical experience gained in the industrialization of the Soviet East, if they decide to design their industrialization strategies on a regional basis, with each country's traditional areas of specialization supplemented within a framework of regional co-operation. This approach is all the more relevant since the idea of regional integration - "collective self-reliant support" - is becoming increasingly popular in Africa. A major emphasis on intra-African co-operation for the development of the basic sectors can be found in the ECA and OAU programmatic documents dealing with the formulation of an economic development strategy for the Africa of the 1980s. What is envisaged in these documents is the development of mainly small industries within the individual African countries in combination with the establishment of large "multinational" African enterprises through the efforts and resources of a few States.

This is an area in which Soviet experience in combining small-scale and large-scale production, and also simple and the most advanced technology, can be instructive.

Thus, the theory and practical experience of accelerated industrialization in the USSR contains many valuable lessons for the African States. "Despite all the differences in the original conditions in the past and present, the experience of the industrial powers is of great importance to the developing countries inasmuch as it is the record of the results of the practical effects of different economic and social systems, and of how, in specific countries, these systems made it possible to achieve a decisive turning point in economic development. What is involved here is the very mechanics of growth in both its social and its technological aspects."[1] One must merely remember that particular socio-economic prerequisites are essential for the application of specific methods of economic development. Any mechanistic transfer of these methods to unprepared soil can only harm the struggle for economic self-sufficiency. Just as any aspect of society's socio-economic life, the selection of an industrialization strategy reflects contending class interests. Therefore, the possibilities of applying advanced Soviet experience depend to a large extent on the strength, in the country in question, of the democratic forces advocating genuinely independent development, and on the consistency with which they pursue their aims.

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[1] N. P. Shmelev. Ibidem, p. 22.

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INTERNATIONAL TRENDS AFFECTING INDUSTRIAL STRATEGIES IN THE DEVELOPING COUNTRIES

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FOREWORD

As part of the preparatory activities for the Fourth General Conference of UNIDO (UNIDO IV), a high-level expert group meeting on industrial development strategies and policies for developing countries is being organized in Lima, Peru, 18-22 April 1983.

This particular meeting is considered to be of crucial importance to the preparations of UNIDO IV, since it has as its objective the review of strategies and policies of the past as well as the identification of key elements in industrial strategies and policies for the 1980s and 1990s as perceived by national policy makers. On this basis, the meeting will identify those issues on which further detailed work in the strategies and policies area should proceed in preparation for UNIDO IV.

International Trends Affecting Industrial Strategies in the Developing Countries considers two quite different sets of factors that will be major influences on the industrialization process in the developing countries in the 1980s - international trade and its interaction with global restructuring, and specialization and the structure of markets, national, regional, and global - and concludes with a summary of policy suggestions in related areas for the developing countries in the 1980s.

The paper is based on material prepared by Dr. András Inotai.

Introduction

The international economic environment has always been, and is currently, considerably influencing the industrial strategy and policy of every national economy. No exception can be made from this fact - even for economies in which industrialization took a definite inward-looking character in order to avoid world economic impacts.

The growing international division of labour in manufacturing which could be observed in the 'seventies, was based on the concept that the reduction of trade barriers, growing international co-operation, and new market possibilities could contribute to increasing growth rates and help solve some of the most acute unemployment problems. The concept had its origin at a time when international conditions were favourable. The real process itself started in the last years of "normal" world economic conditions, but most of its duration fell in a period of worsening external conditions.

At the beginning of the 'eighties the question arises whether the former industrial strategy is still valid or whether - in the light of the recent international economic developments - it must be fundamentally changed. A new problem therefore has to be brought into focus: even if one finds that the earlier paths of industrialization would only lead to an impass, it is absolutely not sure that an alternative strategy is necessarily viable.

The first part of the study points out some salient features of the international economic environment which affect industrial strategies, while the second illustrates alternative ways of coping with the problems facing the developing countries. In the last part of the present paper some general remarks will be made and some conclusions and suggestions formulated.

International trade and restructuring

It can hardly be denied that the world economy is passing through one of its most difficult periods in the last fifty years. Generally, there are three aspects of controversy regarding the new conditions of industrialization in developing countries. Two of them are external, world-dependent factors, one is more connected with the character of economic development in the developing countries.

Diminishing resource flows represent one of the external bottlenecks. In fact, there are several fields where supply conditions have been changed in the last years. The most discussed among them is the oil price explosion, the most recent and probably the most dangerous the indebtedness and the financing of the developing countries. But experts point out that some other fields must be considered too: raw materials in general, technology transfer, and to an increasing extent machines and spare parts, which have become integral parts of the structure of export of some two dozen developing countries.

The new international conditions for growth made their appearance at a time when many developing countries had built up at least some export sectors in manufacturing and started to export to the world market. The appearance of new suppliers would have intensified the international competition in itself, but the fact that sharper competition has been developing on shrinking markets has essentially aggravated the problem. The decreasing or stagnating import capacity of the world market is due to several factors. Growth rates in developed countries have been very modest in the last years. Demand has been reduced also by the lack of financial means in a number of developed, socialist, and developing countries. Some markets seem to be saturated - sometimes in quantitative terms, sometimes in a qualitative form.

The latter has to do with continuous change in the structure of demand (i.e., "structural"saturation and not "physical"). Slower growth rates and decreasing demand - not only on the national, but on the international level, too, at least in some important export sectors of developing countries - led to production overcapacities which tended to aggravate the structural problems of the developed economies. Partly the protection of established but non-competitive industries, partly the protection of the national (or regional) market resulted in protectionism and discrimination against one or another group of countries all over the world.

In the 'seventies, those developing countries which seemed to be successfull on the international market for manufactured products possessed several advantages: a low-cost and disciplined labour force, a diligent and intelligent enterpreneurial strata, and a stable political and economic system attracting foreign investment and credit.

How can the prospects of the above-mentioned three main development issues be judged? In the international economic literature on the subject, there are different views. In fact, arguments may be found on both sides, competing with each other. In the following, the author tries to illustrate the main points incorporating his own feelings about the development framework of the coming years.

Are resource flows really diminishing? Is it an unchangeable, necessary path of development? Certainly, all raw materials - first of all oil and other energy carriers - are physically finite. For several national economies this limit does not exist simply on the physical side, but - much more severely on the financial. The future of the availability of raw materials and oil must therefore be considered under this distinction. As regards the physical availability, no real constraints may be encountered in the following decade.

The main question is whether real prices will rise or fall in the 'eighties. It would be erroneous to start from the present oil situation and forecast constantly falling oil prices in the coming years. There are important factors supporting price cuts on the oil market - and they are not only coming from the exporting economies, but from countries where huge energy-saving and energy-converting programms have been launched in the recent years. On the other hand, a conjunctriual upswing in the developed economies - which cannot be excluded in 1983 and 1984 - may increase the demand for oil, with prices rising again. The author finds that no abrupt price rises are to be expected in the 'eighties, from the economic point of view. Raw material prices can be expected to stabilize in the coming years - the historical moment of abruptly changing price relations in favour of raw materials seems to be over.

In the technological field a new "revolutional phase" is emerging. The extensive introduction of the electronics and computer industry in several branches in the 'eighties and the impact of the results of biogenetics in the coming decade may substantially alter comparative advantage and the international division of labour in industrial products. It will be ever more difficult to keep pace with the general technological development. The main reason is probably not that technology cannot be obtained, but the fact that fewer and fewer national economies will be able to finance technological development and to create an industrial background capable of adapt the new technology.

International financing seems to be the main challenge for the 'eighties - and not only in the light of recent developments in some Latin American countries. Bankers have drawn the conclusion from the financial development of the second half of the 'seventies, that credit conditions must be tightened. Actually, interest rates are falling which can increase the chance of a new upswing. Nevertheless, this upswing will first of all require the largest part of the disposable international liquidity - without solving the liquidity problem of the indepbted developing countries. An upswing-based redistribution of international liquidity is, on the one hand, probably necessary to increase demand for industrial products of developing countries in the developed economies. On the other hand, it is hardly adequate to meet the real problems of indebtedness, in the short-run. Therefore, in this field new initiatives are overdue - and not only in order to take the necessary emergency steps but to improve the structure of international financing.

Positive trends in the growth rate of developed economies will enhance the import capacity of this group of countries, especially if import prices will, at most, experience slow increases. However, the new demand will emerge in a changed structure, and there will be other dynamic products than in the 'seventies. For the developing countries it means that there will be real possibilities of exporting, but not the same commodity structure as before.

Protectionism is not a means to solve structural problems in the developed economies. In spite of this, there is little hope that protectionist tendencies will fade away in the 'eighties. The opposite is more likely: without entering a phase of general protectionism and closing-down, protectionist measures will be maintained. We expect that areas and means of protectionism may change during the coming years. In areas where the developing countries are increasing their exports rapidly and the developed economies fail to undertake the necessary steps for restructuring, new protectionist measures may emerge. It is not excluded that in some other fields, which for a certain time belonged to the most protected ones, trade barriers will be lowered.

In this respect, special attention is to be paid to the differentiated development in Western Europe, the United States and Japan. Western Europe is handicapped in several ways: the growth centre of the world economy has been shifted to the Pacific for the first time since modern capitalism emerged in the world, whereas the economic ties of this region have been developed first of all with Meditterranean and African countries which are less dynamic and in several respects less industrialized than the main partners of the United States or Japan (Latin American and Far Eastern countries, respectively).

A third bottleneck can be detected in the Western European integration process itself. A large regional market has for a long time permitted that uncompetitive (or below-average competitive) sectors survive. Intraregional trade makes up the major part of total imports in labour-intensive and raw material-intensive products, in which developing countries have a clear advantage on the US and the Japanese markets. The import structure of Japan and the United States is more developed than that of Western Europe, considering the imports from developing countries. While in 1980 40.4 per cent of the developing countries' industrial exports to the OECD countries went to the United States and 37.9 per cent in the European Communities, the respective shares in machinery products (SITC 7) were 55.7 and 28.9 per cent, respectively. The highest relative EC shares were in the labour-intensive sectors (textiles 49.3 per cent and clothing 43.3 per cent) and in raw-material intensive chemical products (48 per cent).

The concept of generally shrinking markets is thus not convincing. First of all, in the United States and in Japan the market tends to be growing, and within Western Europe there are different national attitudes, too. Less impetus can be expected in the demand of socialist countries: financing constraints, structural problems of manufacturing and urgent export needs do not promise large possibilities here.

One has, however, to reckon with the fact that the development in the socialist world will probably be less balanced then before, and some countries may offer interesting import markets. Practically the same problem emerges with respect to the developing countries: financing bottlenecks and export requirements make everybody interested in exporting and not in importing. This is one of the practical obstacles to convert this group of countries into a large importer of manufactured goods produced in developing countries.

In order to assess the possibilities for the manufacturing exports of developing countries it is necessary - and it has to be stressed in actual conditions in which most experts are dealing mostly or exclusively with the unfavourable external conditions - to refer to the earlier advantages of developing countries as exporters of manufactured goods. Has their attractivity changed? Are the clearcut advantages of the 'seventies lost?

Manpower is still available in abundance and with a changing structure. In the 'seventies, low-cost and disciplined manpower was required. Today, wihout having lost this type of manpower but certainly with a clear geographical shift in it, comparative advantage appear in semi-skilled and skilled labour sectors, too. The supply side is larger and more differentiated. This implies on the one hand, sharper competition, on the other, new fields of international industrial co-operation.

The entrepreneurial sector has gained a lot of experience in the 'seventies, especially in Far Eastern and Latin American countries; without loosing dynamism - as the latest data on international competitiveness demonstrate. (Some countries could considerably enhance their exports even in the recession-hit years). The developing countries' situation became more critical in the financial aspect, and indebtedness amy lead to more cautious behaviour of foreign capital. Moreover, the strained financial situation may produce changes in the general economic policy which in the seventies has increasingly concentrated on export orientation.

A more inward-looking policy - either as a general, comprehensive concept or as a tactical step to reduce indebtedness - may reveal very soon the high degree of vulnerability of the economy - strengthening the psychological aspect of closing-down. In some rapidly industrailizing countries territory is limited and the infrastructural projects of the 'seventies may be insufficient to ensure the attractiveness of the given economy on the international scale. New financial needs for infrastructure could emerge - without real financial resources to meet the needs. Industrialization also influences not only the economic growth, the export performance, productivity, etc. but has many non-economic "side-effects" which may enter into the economic sphere if social problems cannot be solved adequately.

How far do changes in the international economic framework and in the attractivity of industrializing or semi-industrialized developing countries give ground for "export pessimism"? It is convenient to refer to the historical parallel: in the early- and mid-sixties, there was a general feeling that developing countries cannot enter the international market for amnufactured goods, or if they can, only in very unsophisticated products and by the transmission of multinationals. Although for other and more fundamental reasons, export pessimism has been rather popular in recent years.

Unfortunately, data are not available for the most recent recession-hit years. But in the second half of the 'seventies, when protectionist tendencies were rapidly growing, export competition severely sharpened, and growth problems in some principal markets accentuated, the newly industrializing countries could maintain or even strengthen their market share. But - and this is especially noticeable - a new group of exporters of manufactured goods has appeared: the so-called new exporting countries (NECs) developed at a quicker pace than world import demand and even then the NICs themselved did.

This illustrates that in spite of sharpening competition, export possibilities existed. These countries exported first of all labour-intensive products to highly protected markets. They could do so because they were marginal exporters and the general tariff preferences and the quota system helped their exports increase.

However, there are clear differences between this newly emerging group of countries and the NICs: a growing share of manufacturing exports did not lead to higher growth rates; offshore activities prevail; the level of development is relatively low; special incentives for foreign capital have been given; and the industrial development is less "organic" than in the Far Eastern or most Latin American countries.

Export pessimism is certainly not a convincing argument, but prospects for export-led growth have changed and will be changed in the 'eighties. Some of the main conflicting points are:

- the structure of world demand is changeing which offers possibilities for countries which can change rapidly their industrial structure. At the same time a deeper differentiation is developing;
- protectionism has not expanded to all fields: market possibilities for developing countries are given in not-protected areas. Certainly, with higher export performance, the new area may be protected again, but the flexible economies - forced to respond to the challendes in short periods - will be able to find new outlets for their products;
- competition between more industrialized and in-the-last-years-industrializing developing countries will be sharper,

the latters have comparative advantages where the formers had them some ten years ago. If the NICs fail to adjust themselves, they may be forced out of the international market. The export performance of the newly industrializing and exporting countries may be felt in the earlier industrializing developing countries - protectionist measures are here again not to be excluded;

- a major problem of economic - and first of all industrial - policy consists in the fact that the world economic environment and general overcapacities require rapidly adjusting industrial systems and not new capacities which could theoretically contribute more to economic growth and employment generation;
- export growth is to a lesser extent connected with economic growth and employment in the newly exporting countries, if it is so, and exports are highly necessary to pay back credits and pay for essential imports, the growth and employment generating role must be overtaken by other sectors. But are they able and ready to do so?
- the Far Eastern and Latin American countries - or a large part of them - have more or less established industrial structure and a higher export performance characterized by relative stability. But what about the new group of exporters, which are exposed to primary world market changes;
- the role of transnational companies seems to be growing in the 'eighties, both as a direct investor and as the supplier of the technology. Contacts with these agents will remain highly necessary in the coming decade. How to pursue this objective simultaneously with other general policy aims as appropriate technology, collective self-reliance or basic needs strategy is a major question facing the developing countries; and

- and last but not least: it may be that the maintenance of the export-led growth model will bring to the surface serious economic and socio-political tensions. But is there any other strategy which offers better prospects and less disequilibrium? More concretely: exporting remains a high priority because debts have to be repaid, external equilibrium consolidated. Is there any possibility to separate the national economy into two different fields and achieve at the same time better servicing of debt and seizing the enormous internal problems? Possibilities, limits and tensions of a more inward-looking economic strategy are described in the next section.

Specialization, Co-operation, and Integration

In this section alternative options of the developing countries of avoiding the negative influences of the world market and the recession, as well as structural problems, financing difficulties of the developed economies will be examined. Only the vital questions will be formulated here. The possible areas for strategy options are: intra-regional integrations, broader South-South co-operation, collective self-reliance and East-South industrial division of labour.

The experiences of a common industrial policy based on a regional market are in most cases not successful. Industrial policy on the regional level has practically replaced national import-substituting policies; i.e., the same concept prevailed on a somewhat larger regional market. Beyond well-known infrastructural, technical and administrative problems there are some general issues which hindered regional integrations as a vehicle for promoting in a more successful way common industrialization strategies. First, even the wider markets are very limited for most industrial products. Secondly, at the beginning there were two possible ways of implementing regional industrialization policy: by enhancing the competitiveness of earlier established national industries and by setting up new common projects widening the structure of industry in a region.

The second option was preferred, and it has had two main consequences. On the one hand, the production in established national industries could not become more effective in a regional competition. On the contrary, the wider regional market remained practically closed for these products. On the other hand, financial, distribution and allocation issues were forming severe obstacles in the integration process from the very beginning: the centre of controversy could not be abolished, only shifted from trade policy and adjustment issues towards allocation policy and structural issues.

Thirdly, regional market became more and more a "protection ground" and not a "training ground" as put forward in theory. International competitiveness and better export performance was largely due to world market effects and close contacts with extra-regional markets, and not to regional training grounds. Of course, some countries started exporting to several member countries of an integration grouping, but in most cases this move happened after successful world market performance. Thus, the widest international division of labour made possible higher regional market shares and not vice versa.

It is worth noting that all economies which could substantially increase their industrial exports in the 'seventies, did first of all rely on the global market. It is true in the opposite sense, too: economies basing their industrial exports on the regional market cannot be found in the group of the NICs nor in the "second-tier" exporting countries. And what is more: industrial exports of countries which relyed on the regional market and which considerably increased their industrial exports until the early 'seventies (Central American countries, Colombia, Egypt) suffered decreasing growth rates, indicating the limited speact for expanding industrial exports within a given region.

The changing pattern of the world economy is certainly not favouring the process of regional integration. Challenges have to be faced not only by national economies but by regional groupings. These regional groupings have to survive at a time when not only external influences are increasingly disadvantageous, but earlier integrational impulses seem to be exhausted.

The question then arises: what a role can intraregonal industrial co-operation play in the future? Tehoretically, there are a number of possibilities:

- world-market-oriented industrial development in some well-defined sectors;
- common direction, management and control of global redeployment processes;
- orientation on the regional market in order to satisfy growing regional needs;
- common protection against disruptive tendencies of the external world (i.e., maintaining structural challenges in "tolerable" limits); and
- common infrastructural development as a necessary step to increase overall co-operation and improve the market access of regional industrial goods.

At the same time, there are a number of areas where the pursuit of a strategy of regional integration will present difficulties and challenges for the developing countries:

- large-scale projects which offer world-wide competitiveness need substantial financial means and technology transfer. Thus, international financing channels must be found and contacts with main sources of technology have to be established and maintained;
- the effectiveness of regional industrial production must be increased by rationalizing parallel national industrial priorities. The difficulties are well known in national framework and in many countries, and it is at least doubtful

that tensions would be less strong in the regional framework;

- international competitiveness can only be achieved if the location of the given project is economically well grounded. How to maintain, in these circumstances, the principle of equal distribution of regional gains and losses and how to follow the path of harmonious development on the regional level is a crucial question; and
- since industrial development is a highly-ranked political issue in all developing countries, regional co-operation has clear political impacts. Different interests, the difficulties of harmonizing various concepts represent a heavy burden on political decision-making, and tend to reduce the political basis of co-operation among developing countries.

The prospects for global South-South co-operation are, however, better. There are some positive signs in recent years, especially in the OPEC countries where some developing economies have become strong competitors with developed country and socialist country exporters. For a dozen developing countries, the promising industrial markets in rapidly growing developing economies and in oil-rich countries will represent an incentive for expanding industrial exports.

Industrial strategy may be based on a better all-round co-operation among developing countries. Among international experts the following points have been stressed: co-operation in the raw material sector and in the infrastructural projects or in common service sectors should be increased; trade preferences should be given only step by step and perhaps connected with higher secruity of supply; preferential treatment of goods produced in inter-firm co-operation should be given; and joint ventures of enterprises of developing countries should be strengthened.

No doubt that all these steps may improve South-South-industrial co-operation. Nevertheless some general concerns remain:

- experience up to now shows even in recession-hit years, the import market for industrial goods from developing countries is less unstable in industrially developed economies than in developing countries;

- if the oil price does not increase in real terms in the coming years, the main OPEC import markets will tend to decline, while in other more industrialized developing countries the external financing may break the expansion of the import capacity of the economy;
- the commodity pattern of developing countries' industrial exports is similar to the production pattern in most of the developing economies. Thus, the competitive edge is likely to increase, even if signs of redeployment within the developing world are present;
- technology, modern machinery, some spare parts and basic materials forming an integral part of the technology process remain to be obtained from outside the developing countries; and
- external financing and the need to finance the external debt may divert exports towards developed countries, with their wider markets and higher liquidity.

Collective self-reliance can be accepted as a political principle but can hardly be implemented in economic practice. Several simulation models constructed in the last years indicate that an attempt to economically disengage from the developed countries would generate only a very marginal decline in the relative trade volume between developing and developed countries. At the same time, the structural development would be undesirable in two senses: first, it would re-establish the traditional trade pattern of changing primary goods for industrial products. Secondly, it would generate traditional trade pattern within the developing world, too, between exporters of industrial products and exporters of primary goods.

The other major conclusion emerging from the simulations is that the benefits realized by the developing countries were not distributed equally among the members. In this point, the collective self-reliance strategy seems to be especially vulnerable.

The third conclusion is that policies which generate benefits for the developing countries may imply costs for other participants in the world economy. It is at least problematic whether other countries would accept them or give responses which may hurt international economic and political relations and reduce the possible benefits for developing countries.

Socialist countries as alternative import markets for industrial products of developing countries may play a certain role in the coming decade if:

- the financing problems can be eased;
- a higher growth rate could be achieved;
- the structure of industrial production is rapidly changed; and
- energy- and raw material-saving can be enforced.

However, even if the mentioned conditions can be met, the import market remains relatively narrow, playing a complementary but not a substituting role for industrial exports of developing countries.

It is foreseeable that - without denying the real possibility of industrial co-operation and some very positive results - the main tendency will remain the sharp competition on world markets between socialist and developing country exporters of manufactured goods. The competition will first of all centre on the OECD market, but it will be felt in OPEC countries and - not to be excluded - even in some socialist countries (e.g., the Soviet Union).

Conclusions and suggestions

The international economic environment for industrial development has become more difficult and complicated in the early 'eighties than it was in the 'seventies. Conditions of export-led industrialization have changes - but without creating better conditions for other comprehensive development strategies.

Export of manufactured goods from developing countries will increase in the 'eighties at a slower pace than before, but a growing share for the developing countries will also characterize the present decade. Within this general picture, the circle of manufactured goods exporting countries will increase and the structure of exports will become more diversified. Beside labour-intensive and low-skill products, capital-intensive goods and skill-intensive articles will appear in the exports of the more industrialized developing countries. Special attention has to be given to the selection of partners: the import market of the United States and of Japan seems to be structurally more advanced than that of Western Europe. With the protectionist tendencies in Western Europe which are likely to remain in the 'eighties, the already observable "structural lag" will be even greater.

One of the main contradictions of industrial strategy in the present decade consists in the fact that, on the one hand, exporting remains necessary, on the other, export-led industrial strategy is likely to enter into conflicts with other economic policy issues. The separation of exporting from the generation of growth process and of employment will be characteristic of the "second-tier" exporters. Industrial policy cannot meet all the challenges: some previous fields of industrial strategy have to be overtaken by other sectors.

Differentiation processes within the developing world cannot be slowed down or halted. On the contrary, differences can be expected to increase in the course of the 'eighties. The industrialization of the relatively more developed Far Eastern and Latin American countries will probably continue and respond successfully to the international economic challenges. Here the main issues seem to be of domestic adjustment (internal restructuring), discovering new advantages and the creation of more effective bargaining power in international economic issues.

The second group of industrial exporters will probably face the most delicate problems. Here industrial exports are indispensable for foreign financing but not involved in the national reproduction processes.

In the group of developing countries which up to now did not export manufactured goods except a negligible amount, industrial policies directed to increase the export capacity of the given economy may emerge. Some of them may enter the group of the "second-tier" exporters, but the majority will continue to face serious bottlenecks in their attempts at comprehensive industrialization.

Differences in the starting position and in the economic strength and prospects involve evident differences in the means to be applied. The role of education and professional training will become manifest in the relatively more developed developing countries, offering them new production lines and export possibilities. Industrial exports will be accompanied by servicing and in some cases by technology transfer. The problem of small-scale industry remains very actual, not only concerning employment-creation and regional policy, but - and to a growing extent - as a flexible unit which can rapidly adjust to external challenges and structural requirements.

No universal path and no universal remedy can be suggested. However, regional autarchy and disintegration from the world economy seem to involve serious damages and backwardness even if the external conditions remain unfavourable. Retaining global economic relations is a primary necessity which has to form the framework for regional industrial co-operation. In this respect, the following activities can be forecast:

- common efforts to prevent or reduce negative effects of protectionism;
- increasing regional bargaining power in international economic issues in all the fields possible;
- restructure regional integrations from import-substituting aims to common export policy goals; and
- better use of the resources of developing countries for industrial development.

Industrial strategy in the coming years has to reckon with the fact that, beside elements of co-operation, the prevailing feature seems to remain competition on the world market. Competition will be extended to the special national offers to be made in order to attract foreign capital, get larger international credits, and guarantee access to technology sources.

Global industrial strategy with longer-term validity can be elaborated only if the following conditions are met:

- the international monetary and financial system has to be consolidated, and first of all issues of crucial indebtedness must be settled;
- a complex policy of international restructuring of the manufacturing sector is overdue;
- actions must be taken in accord with the relation that protection is no solution to the real problems; and
- in order to avoid current problems of market disruptions, labour redundancies and depressed manufacturing profitability and to increase the probability of smoother and longer-term redeployment processes, exchange of information between industrial policy makers in developed and developing countries has to be institutionalized on various levels.

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

HIGH-LEVEL EXPERT GROUP MEETINGS PREPARATORY TO THE FOURTH GENERAL CONFERENCE OF UNIDO

Industrial Development Strategies and Policies for Developing Countries

Lima, Peru, 18–22 April 1983

A BRIEF INTRODUCTION TO RE-ORIENTATION OF STRATEGIES FOR INDUSTRIAL DEVELOPMENT IN CHINA

This document was prepared by an expert of the Government of China.

The views expressed are those of the author and do not necessarily reflect the views of the secretariat of UNIDO. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

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FOREWORD

As part of the preparatory activities for the Fourth General Conference of UNIDO (UNIDO IV), a high-level expert group meeting on industrial development strategies and policies for developing countries is being organized in Lima, Peru, from 18 to 22 April 1983.

This particular meeting is considered to be of crucial importance to the preparations of UNIDO IV, since it has as its objective the review of strategies and policies of the past as well as the identification of key elements in industrial strategies and policies for the 1980s as perceived by national policy makers. On this basis, the meeting will identify those issues on which further detailed work in the strategies and policies area should proceed in preparation for UNIDO IV.

Each of the government experts nominated to the meeting was invited to present a brief paper outlining the perceptions in terms of the future industrial developments in the 1980s and 1990s. This particular paper was prepared by an expert of the Government of China.

Over the past 33 years since its founding, the People's Republic of China has, by overcoming numerous difficulties, scored tremendous achievements in economic construction and industrial development, which would have been inconceivable in the old society. The Chinese people have, nevertheless, also suffered setbacks on their road of advance. Based on the historical experience it has summed up, China has now entered a new stage of its socialist modernization programme and set forth new strategic objectives for its industrial development.

I. Remarkable achievements despite a weak foundation

Faced with the legacy of semi-feudal and semi-colonial China, the People's Republic of China had to overcome a plethora of problems. The pre-liberation annual output of the major industrial products even in a peak year was pitifully low: only 923,000 tons of steel, 62 million tons of coal, 6,000 million kwh of electricity and 450,000 tons of cotton yarn. The output of 1949 was even lower: 158,000 tons of steel, 32.43 million tons of coal, 4,300 million kwh of power and 330,000 tons of cotton yarn.

With liberation, the Chinese people have become the masters of the country. Through thrift and hard work, they have gradually established an independent and comparatively complete industrial system and national economic system. Compared with the highest records of the old China, in 1980, production of steel increased 40 times to 37 million tons; that of coal rose by 10 times to 620 million tons; that of power went up by 50 times to something over 300 billion kwh; and that of cotton yarn increased by 6.5 times to 2.93 million tons. In 1980, the output of crude oil reached

105 million tons and the output value of the machine building industry exceeded 127,000 million yuan. Starting from scratch, China has built a group of new industrial bases on the vast expanses of hinterland and minority nationality regions. Industrial construction has promoted the expansion of agricultural production and resulted in improved people's livelihood. Despite the fact that population has grown too fast and the figure now stands at something over 1,000 million, the country has basically guaranteed people's needs for food and clothes and it has done so by relying on its own efforts.

II. Meeting people's needs, the fundamental aim of economic development

Measured against the needs of the people, China's achievement in the economic construction and industrial development is initial. Production level per capita is very low. The main problems that existed were: a long-time disproportion among agriculture, light industry and heavy industry; sharp changes in the development speed, with curtailment alternating overextension; uneven development between regions; low economic results of economic construction; and failure to keep the improvement of people's livelihood commensurate with the amount of labour they had put it. Causes for above-mentioned problems are twofold. On one hand, a very weak foundation at the time of liberation and an international environment as it was then, required that the country quickly develop its heavy industry and increase its national defence capabilities, with the result that a considerable part of material wealth could not be directly used to improve people's livelihood. On the other hand, errors of over-eagerness to achieve quick success and rashness in advance were made in the guidelines for the economic construction. This was manifested in the impractically high speed and targets, particularly in the case of heavy industry, too large a scale of industrial construction to the extent that it went beyond the limit of the national strength.

Learning a lesson from the past errors, the Chinese Government has started to carry out since 1979 the principle of "readjustment, restructuring, consolidation and improvement" of the national economy, in an effort to find a new road of construction that requires comparatively low investment, is practical in the speed and promises good economic results and greater benefits to the people. Economic readjustment over the past three years has yielded the expected results. The proportions between accumulation and consumption, between production and construction on one hand and people's livelihood on the other, and between agriculture, light industry and heavy industry have on the whole tended to be harmonized. The work of economic readjustment has entered a stage of greater depth.

This, in essence, represents a major shift in China's strategies for economic development.

The shift signifies that the fundamental objective of China's economic development will be to meet the material and cultural needs of the people, in an effort to correct the tendency of production for production's sake and industrial development for industrial development's sake that existed to a certain extent in the past.

It signifies that the past one-sided emphasis on high output value will give way to economic results as the first consideration.

It signifies the establishment of a rational economic structure for a proportional development of agriculture, light industry, energy, raw materials, machine building and construction industries and transport and communication, instead of putting one-sided emphasis on the development of heavy industry at the expense of agriculture and light industry.

It also signifies that future industrial growth will mainly rely on tapping the existing enterprises' potential through technical transformation, a departure from the past one-sided approach of resorting to expanded capital construction for growth.

III. Strategic objectives and main policies and measures for the future

Experience over the years proves that economic construction, including industrial construction, should be adapted to the national conditions, conform to the objective laws, be carried out within the country's capacity, and proceed in an orderly, step-by-step way. A construction project should go through scientific appraisal before it is undertaken and economic results should be emphasized.

On the basis of investigation and study, the Chinese Government has set the objectives for its economic modernization programme for the period from 1981 to 2000. Namely, on the premise of constantly improved economic results, the country will strive to quardruple its gross annual output value of industry and agriculture, from 710 billion yuan in 1980 to approximately 2800 billion yuan in 2000. This will place China in the front ranks of the countries of the world in terms of gross national income and outputs of major industrial and agricultural products and the Chinese people will be comparatively well-off both materially and culturally.

The strategic objectives will be realized in two steps. The main task of the first ten years, i.e. from 1981 to 1990, is to lay a sound foundation, accumulate strength and create conditions. In the second, i.e. from 1991 to 2000, China will usher in a new period of vigorous economic development, with an all-round upsurge of the national economy. The average annual growth rate of the gross industrial and agricultural output value of the first ten years is projected at 5 - 6 per cent and that of the second, at 8 per cent and more. The average annual growth rate for the 20 years as a whole is 7.2 per cent.

The formulation and implementation of China's 6th Five-year Plan (1981-1985) is an important step towards realizing the grand goal of two decades.

The main policies and measures of the long-term industrial development include:

1. During the period of the 6th Five-year Plan, development of China's industrial and agricultural production will maintain an appropriate rate of growth. Under the plan, the gross industrial and agricultural output value for 1985 will reach 871 billion yuan, of which, the total industrial output value will be 605 billion yuan. This is an average yearly increase of 4 per cent for both industry and agriculture, but in practice, efforts will be made to bring the figure to 5 per cent in the course of carrying out the plan. Of the total industrial output value, the average yearly increase of light industry will be 5 per cent, while that of heavy industry will be 3 per cent. A better ratio among agriculture, light industry and heavy industry will be established.

2. The existing enterprises will be consolidated in an all-round way and vigorous efforts will be made to raise the efficiency of operation and management.

The number of industrial enterprises in China almost doubled in the ten years from 1971 to 1980, totalling 377,000 (not including those run by production brigades in rural areas). There was a good deal of blind expansion in the excessive growth. The Government has now decided that the following categories of enterprises must be the first to close down, suspend operations, amalgamate with others or switch to the manufacture of other products: those that are heavy consumers of materials, turn out poor-quality products, and have been running at a loss over the years; those that have a huge overstock of products, and those which vie with the advanced ones for energy, raw and semi-finished materials, transport facilities and markets.

Present enterprises must be consolidated quickly and firmly. Rules and regulations for management and the responsibility systems must be established. Appropriate objectives must be set for the development of products suited to the social needs. Remarkable improvement of the performance in the major technical targets must be attained.

3. Promote technical progress energetically and give full play to the role of science and technology in industrial development.

To quadruple its gross industrial and agricultural output value by the end of this century, China should mainly rely on the technical transformation of existing enterprises, rather than to concentrate on the building of new ones. All branches of our industry will have to adopt extensively advanced technologies which have been in common use in the economically advanced countries since the 1970s or the early 1980s and which are applicable in China. Technical transformation of the machine building industry which provides technical equipment for all other branches should go ahead of others. Areas with better technical level should help and promote the improvement of industrial technical level in the minority nationality areas and outlying border regions.

4. Focus on construction of energy industry and transport and communications.

Energy, transport and communications are two weak links in China's economy. The Government has decided that while efforts are made to bring down energy consumption, necessary funds will be pooled to strengthen the construction of coal, petroleum and power industries, railways, ports, inland rivers, roads and postal and telecommunication facilities. The volume of investment earmarked for capital construction in the 6th Five-year Plan is 230 billion yuan and 38.5 per cent of that is allocated to the above-mentioned sectors.

5. Energetically and steadily speed up the restructuring of management systems.

The guidelines for restructuring the management system is to correctly implement the principle of ensuring the leading role of the planned economy supplemented by market regulation. Strict control over the key enterprises and major economic activities should be exercised through planning while a flexible policy will be adopted towards lesser ones, which should be given necessary right to manage their own affairs. On the premise that the socialist public ownerships are predominant, multiple economic sectors and forms of management should be allowed to exist simultaneously. Egalitarian practice in distribution should be overcome and the principle of "from each according to his ability and to each according to his work" should be implemented among workers and staff, so as to bring the enthusiasm of the labourers into full play.

6. Expand economic and technical exchanges with outside world.

On the basis of independence and self-reliance, China actively expands its international exchanges in the field of economy and technology. The total volume of import and export is planned to reach 85.5 billion yuan by 1985, an increase of 51.8 per cent over 1980 and an average yearly increase of 8.7 per cent. Of the total, import will be 45.3 billion yuan, an annual increase of 9.2 per cent, which is higher than the growth rate of export.

We do not favour autarchy or sticking to conventions. On the other hand, we are opposed to dependence on and blind faith in foreign countries. On the condition that its state sovereignty is respected, foreigners are welcome to invest in China and open mines and factories in the form of joint ventures. The legitimate interests of foreign investors are protected. We will make proper use of preferential foreign credits, import advanced foreign technologies and management expertise, study them, adapt them to China's conditions and popularize their use. Over recent years, the U.N. development system, including UNIDO, has provided China with technical assistance, which has been welcomed by Chinese industrial and other sectors.

On its part, China will continue to discharge its internationalist duties, and provide economic and technical assistance to friendly third world countries within its capabilities. It is our hope that through a variety of effective approaches and forms, "South—South co-operation" in a nature of mutual help will make constant advance in the field of industry and promote the establishment of the New International Economic Order.

It is also our hope that "South—North exchanges" in industrial field will make progress on the basis of equality and mutual benefit and mutual complementarity. Such international industrial co-operation will be beneficial not only to the development of "South" countries, but likewise to the "North" countries in overcoming their economic difficulties, as well as to the healthy international economic development.

Annex

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

HIGH-LEVEL EXPERT GROUP MEETINGS PREPARATORY TO THE FOURTH GENERAL CONFERENCE OF UNIDO

Industrial Development Strategies and Policies for Developing Countries
Lima, Peru, 18–22 April 1983

INDUSTRIALIZATION, RESTRUCTURING AND ADJUSTMENT

This paper was prepared by Professor Paul Streeten, as consultant to the UNIDO Secretariat.

The views expressed in it are those of the author and do not necessarily reflect the views of the secretariat of UNIDO.

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FOREWORD

As part of the preparatory activities for the Fourth General Conference of UNIDO (UNIDO IV), a high-level expert group meeting on industrial development strategies and policies for developing countries is being organized in Lima, Peru, 18-22 April 1983.

This particular meeting is considered to be of crucial importance to the preparations of UNIDO IV, since it has as its objective the review of strategies and policies of the past as well as the identification of key elements in industrial strategies and policies for the 1980s as perceived by national policy makers. On this basis, the meeting will identify those issues on which further detailed work in the strategies and policies area should proceed in preparation for UNIDO IV.

Industrialization, Restructuring and Adjustment focuses on two themes: on the impact of the process of industrialization on income distribution, on poverty, and on people in general; and on the nature of the process of adjusting to structural change in the developing countries.

The paper was prepared by Professor Paul Streeten, as consultant to the UNIDO Secretariat.

The World Setting

The last five years have been marked by an intensification of many of the problems that have affected the world economy since the early 1970s. Sluggish output and productivity growth in the advanced industrialized economies, a contraction of the rate of expansion of international trade, and with it growing protectionist pressures, sustained inflationary pressure on the prices of manufactured goods, together with highly unstable prices for the primary commodities that have fallen to their lowest level (in real terms) in thirty years, steep increases in the cost of energy, huge payments imbalances, high interest rates, fluctuating exchange rates, and a growing world food crisis, are among the most acute of these. Partly as a result of this unfavourable world economic environment, the industrial growth performance of the developing countries -- especially the low-income countries containing the bulk of the population -- has been poor, and their prospects for growth and development in the 1980s are not encouraging. The centrally planned economies have also experienced a decline in their rates of growth; and some of them have experienced acute balance of payments problems.

In the developed market economies aggregate output grew at an average of just over 5 per cent per year in the 1960s, and inflation and unemployment were at low levels. Growth between 1973 and 1980 declined to an average of 2.5 per cent per year. Moreover, the pattern of annual growth became irregular -- GDP actually fell in 1975, and, after recovering in 1976-78, the growth rate declined to just over 1 per cent in 1980, declining further through 1982. Slackening growth was accompanied by an upsurge in unemployment and inflation. By 1982, there were over 30 million unemployed in the OECD countries, nearly 9 per cent of the labour force. Inflation, which averaged only 3 per cent per year in the 1960s, averaged 10 per cent in the 1970s. The persistence of inflationary pressure led to the intensification of restrictive monetary and fiscal policies by the Governments of these economies, pushing interest rates to exceptionally high levels and delaying the recovery of output and the process of expansion. Hence, even optimistic forecasts do not suggest that the growth of these economies in 1980-1985 will exceed the average for the 1970s as a whole, and actual performance will, in all probability, fall below this.

These developments were reflected in changes in the field of international trade. The rate of growth of international trade declined from 8.4 per cent a year in the 1960s to 6.3 per cent in the 1970s. Preliminary figures show further declines for the years 1980-1982. But certain marked differences in export performance and the terms of trade emerged as betweeen the developed market economies, oil-exporting developing countries, and middle-income and low-income oil-importing developing countries. The oil-exporting developing countries experienced a twofold increase in the purchasing power of their exports during the 1970s, due almost entirely to the effect of the OPEC price increases on their terms of trade. The developed market economies were able to counter the effects of the first round of oil-price increases by expanding their exports and through the effects of inflation on the prices of their manufactured exports: in the second half of the 1970s, their exports grew at 8.4 per cent per year and their average export prices rose by 9 per cent per year. The middle-income oil importing developing countries were also able to expand their exports vigorously -- their export volume almost doubled in the 1970s -- and there was actually a slight improvement in their terms of trade. The low-income oil-importing developing countries fared very badly however: their export volume increased by less than 50 per cent during the 1970s, and the effect of more than half of this was wiped out by a deterioration in their terms of trade due not only to oil price increases, but also to increases in the prices of other imports, including foodstuffs and manufactures.

The role of industrialization

Before the depression of the last five years had brought back an awareness of the blessings of economic growth, industrialization had come under fire from several directions. Those disenchanted with industrialization have called it "exhausted" or "distorted", accused it of lacking integration, or of leading to a new and more insidious form of dependence and exploitation than colonial-type primary product dependence, especially through transnational corporations and a domestic "lumpenbourgeoisie". It has been said that social objectives, such as income distribution, jobs and meeting the basic needs of the poor are more important than high rates of industrial growth; that the drive for industrial growth has destroyed the environment and has rapaciously used up exhaustible resources and, in particular, non-renewable sources of energy. It has been claimed that development in countries in which cultivable land and capital are scarce, and where the labour force grows rapidly and mass emigration is ruled out, must aim at raising the yield of land to grow food for domestic consumption; that food output can grow only if markets exist in which the food can be sold; and that, exports apart, these markets must be found in the countryside, among the mass of the rural population. Rural development, the argument goes, combined with income redistribution, is a necessary condition of economic growth. Finally, it has been argued that growth of agricultural productivity is the essential condition for progress on other fronts: improved international terms of trade, higher real wages, a larger marketable surplus to sustain industrial growth, etc.

In the face of all these apparent criticisms of industrialization the developing countries have insisted that industrialization is the key to their progress. At the 1975 World Conference in Lima the United Natons Industrial Development Organization (UNIDO) proposed that at least 25 percent of global industrial production (value added in manufacturing) by the developing countries should be the target for the year 2000. (It was 10.3 percent in 1981.) *

It would be easy to meet these criticisms once the purpose of industrialization is brought out more clearly, for most of the above arguments are not arguments against industrialization as such but against an inegalitarian, concentrated, dualistic, high-cost, inefficient form of industrialization. A broadly based, labour-intensive, efficient style of industrialization is not vulnerable to the strictures meted out above. But it presupposes clarity of objectives and a rational choice of instruments to achieve the objectives.

In a unified development strategy industrialization has a special role to play. The poorer the country, the larger the proportion of the population that is engaged in producing food. To rise above poverty, industrialization is necessary, for industrialization means the application of power to production and transport. Output and consumption per head can rise towards

* Recent revisions indicate a share in 1981 of 11.0%.

the desired modern levels only with the help of mechanical aids. In this sense development, including rural development, is industrialization.

In addition, manufacturing industry is subject to increasing returns, to learning effects and to cumulative processes. The exceptionally high growth potential of manufacturing industry has been demonstrated in several countries in recent years.

In the face of the charges against and criticisms of industrialization, it must be emphasized that in order to achieve the social objectives rightly advocated, and in order to fight the evils of pollution, premature raw material exhaustion, unemployment, inequality and market limitations, industrial growth is an absolutely essential condition. It must, of course, be growth that benefits the right groups, that is properly composed and properly measured, so that social costs are fully accounted for and proper relative weights are given to different components, to the working conditions and to the human relations in which production is carried out.

Statistically there is no evidence of an inevitable conflict between high rates of industrial growth and the achievement of other development objectives; if anything, there is evidence to the contrary. In many, though not in all cases, the achievement of social objectives has been consistent with high rates of industrial growth and, indeed, has depended on them. The causal links between these variables are complex, controversial, and still partly unknown, but the promotion of industrial growth is one of the strategic variables in the complex set of related national and international development policies.

Industrialization for what?

Many confusing and complex issues become clearer and simpler if the purpose of development and the place of industrialization in a development strategy are borne in mind. In particular, questions about energy, the environment, pollution, appropriate technology, appropriate products and consumption patterns, markets, international trade and integration and the multinational corporation can be answered more easily if the objective is clear. Many apparently technical and separate problems are seen to be connected and become amenable to a solution if we know where we want to go.

Development is not about index numbers of national income, it is not about savings ratios and capital coefficients: it is about and for people. Development must therefore begin by identifying human needs. The objective of development is to raise the level of living of the masses of the people as quickly as is feasible. This implies meeting such needs as continuous employment or, for the self-employed, secure and adequate livelihoods, more and better schooling for their children, better medical services, clean water at hand, cheap transport and also a higher and growing level of measured income. Much of this can be achieved in ways which do not register a high growth rate of measured output, while a high and growing rate of national income growth is consistent with leaving these essential needs unsatisfied.

If development is approached in these terms the place of the motor car, of heavy demand on sources of energy, of highly sophisticated luxury goods, of the transfer of inappropriate products and technologies, of the role of the multinational enterprise, of urbanization, of the relation between industrial and agricultural policies, and of domination and dependence, all appear in a different light.

The disenchantment with industrialization has been based on a confusion: it is a disenchantment with the form that economic growth has taken in some developing countries and with the distribution of its benefits. Certain types of modern product and modern technology have reinforced an income distribution and a style of development that is out of tune with the basic goals sketched out above. After a reorientation of goals, industrialization as the servant of development regains its proper place in the strategy. Industry should provide the producer and consumer goods required by the people, the majority of whom live in the countryside; hoes, simple power tillers and bicycles, not air conditioners, expensive cars and equipment for luxury flats.

An industrialization strategy guided by the goal of meeting the needs of the poor not only leads to a different composition of products and of techniques; it also contributes to stopping the drift to the towns and reduces the demands on highly skilled manpower and other scarce resources that rapid urbanization makes. By raising the level of living of the poor people in the countryside, it reduces the pressure to leave the farmsteads and to expand expensive urban services.

It also introduces different incentives and opportunities into international trade: it implies a reorientation towards more trade between developing countries. Starting with similar factor supplies and similar levels of demand, developing countries can more appropriately produce for one another what they consume and consume what they produce. This can be the basis of mutually beneficial trade. In simple mass consumption goods, often produced in a labour-intensive, capital-saving way, the developing countries have a comparative advantage and could expand their trade among themselves. The same goes for technical assistance. In agriculture, social services, family planning and appropriate technology, countries at similar levels of development are better suited to assist one another than countries with very dissimilar experiences.But all this depends upon countries opting for a style of development that gives priority to satisfying the simple needs of the large number of poor people. Industries producing clothing, food, furniture, simple household goods, electronics, buses and electric fans would thrive without the need for heavy protection in a society that had adopted this style of industrialization and development. Much of the criticism of inefficient, high-cost industrialization behind high walls of tariffs and quantitative restrictions should be directed at the types of product and of technique which cater for a highly unequal income distribution and reflect entrenched vested interests. It is in no way a criticism of industrialization for the needs of the people.

This does not mean that opting for such a style is an easy matter. The required changes in the thrust of research and development expenditure and of science policy, the attack on the living standards of those profiting from the present type of technology and products, the more complex system of administration and the required co-ordination and changes in trade and investment policy are enormously difficult tasks. The point, however, is that no solution is possible unless the fundamental objective is borne in mind.

Technology and poverty

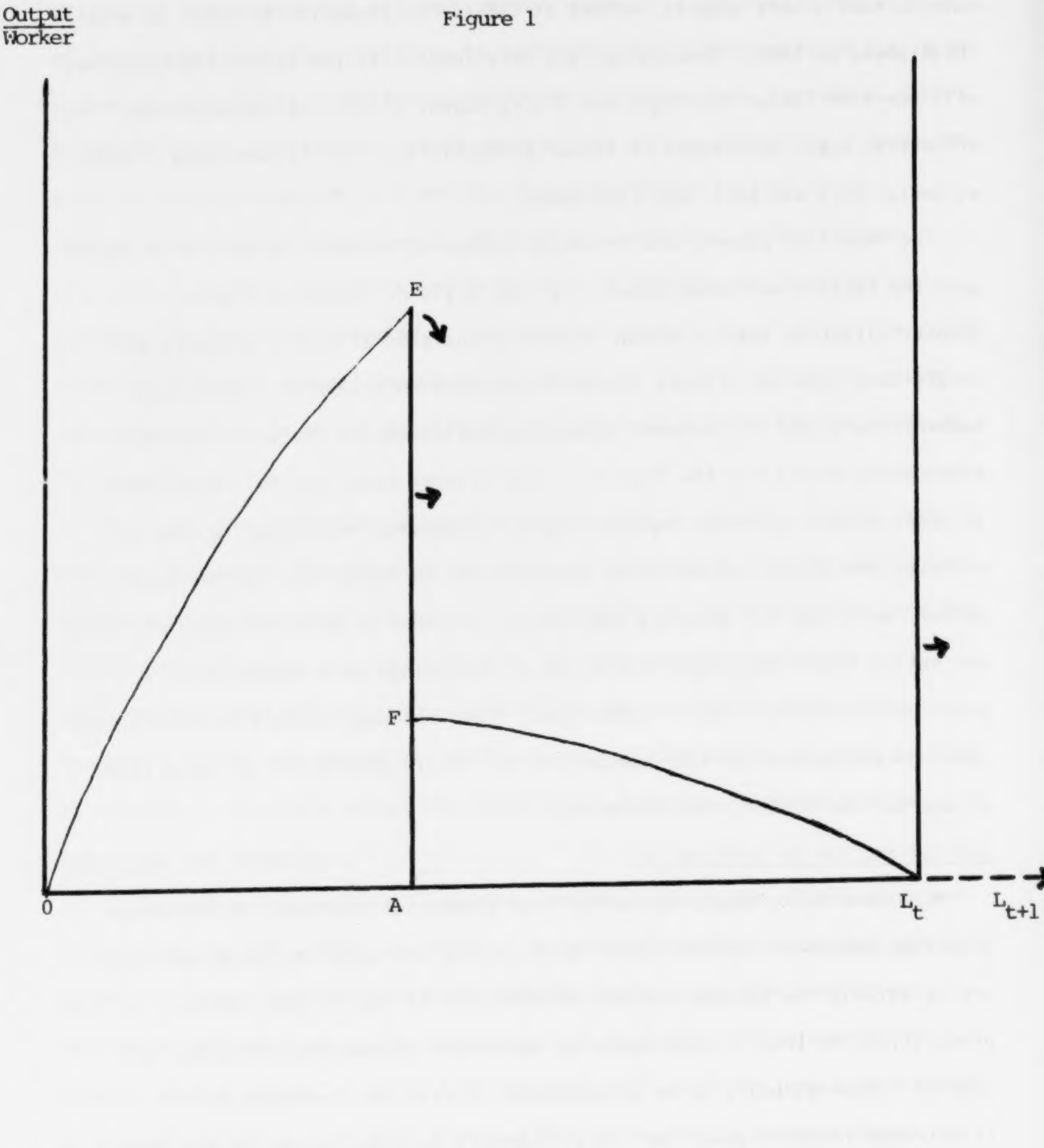
In analysing the impact of industrialization upon income distribution and poverty between and within countries, a major consideration is whether the beneficial spread and "trickle down" effects prevail over the cumulative effects of economies of scale, experience and learning. The unequalizing effects between countries arise from the fact that countries ahead in the race of industrialization have more opportunities to accelerate further their industrialization than those behind. The less industrialized countries would have to make a very powerful effort at industrial promotion to catch up with those ahead of them. Eventually, the more industrialized developing countries will run into labour shortages and rising wages, offsetting and more than offsetting their advantages in labour productivity. But in some cases, such as India, this can be a long time ahead.

The impact on poverty and income distribution within a country will depend upon the factors mentioned above, i.e. the style of industrialization. Industrialization that is labour intensive and aims at simple products will create more jobs and primary claims of the poor on resources. There can, however, be a conflict between maximizing employment in the short run and eradicating poverty in the long run. The dilemma takes the following form. In order to use and adapt imported capital-intensive technology, a country needs an indigenous technological capacity and an indigenous capital goods sector, which may not generate many jobs. But they do generate the experience and skills that make future absorption of technology more suited to eradicating poverty. On the other hand, light consumer industries create more jobs now but do not lay the foundations for future adaptation and generation of appropriate products and processes.

Dualism and how to overcome it

Most developing countries suffer from industrial dualism. In the urban, organized industrial sector labour productivity and wages are high, but jobs are relatively few because capital is limited. In the informal sector productivity is low, in some cases at the margin approaching zero, but all surplus labour attempts to be accommodated in it. The situation is illustrated in the figure. We trace from left to right labour in the modern, organized sector, from right to left in the informal sector. OL is the total

Figure 1


Output
Worker
E
F
0
A
L_t
L_{t+1}

labour force. The slopes of the two curves indicate the marginal productiviy of labour, which is much higher in the organized sector, approaching zero in the informal sector at A, as new entrants only take away business from existing ones. As capital accumulates, AE shifts to the right. But as population and the labour force grow, OL also moves to the right from OL_t to OL_{t+1}. The gap EF, which is a measure of the dualism, tends to be perpetuated.

Four measures are possible. First, capital might be accumulated at a faster rate, so that the organized sector can absorb more workers. Secondly, population growth may be slowed down, so that jobs have to be created for fewer people. Thirdly, modern technology may be adapted downwards, so that a given amount of capital can absorb more workers. And fourthly, the technology of the informal sector can be upgraded, so that its productivity rises and the gap of dualism is closed by higher earnings in the informal sector. The last method is the most promising, for it requires in the first instance only an end of the existing discrimination that many informal sectors now suffer from: better access to capital markets, information, foreign exchange and marketing facilities. Beyond that, it calls for a redirection of the thrust of R&D expenditure and an indigenous adaptive capacity for design of both products and processes.

Restructuring and Adjustment

The objectives of an industrial development strategy have to be pursued in a changing world. These changes have been particularly drastic in the last decade, and the future promises no relief from quite rapid and often unexpected change. The current world crisis has called into question the whole inherited framework of economic analysis and policy. The crisis has also underlined, if underlining is necessary, that economic and political forces cannot be treated separately and in isolation, for the demands of organized political groups such as the trade unions, or the oil exporters are economic exercises in political power. Structural changes are both the cause and the effect of these radical changes in international economic and political relations, and adjustments in the industrial structure are called for.

Words like "structure", "restructuring" and "structural adjustments" suffer, however, from a lack of clarity, and it is therefore useful to begin by drawing some distinctions and clarifying the concepts.

Adjustment is adaptation to change, often unexpected change. The change may be favourable or unfavourable to the set of objectives pursued by a government. In the case of a favourable change (e.g., unexpected improvement in the terms of trade, unexpected additional capital available for investment), the challenge to policy makers is to derive the maximum benefits from it; in the case of an unfavourable change, to adapt with the minimum social costs, that is to say, the lowest sacrifice to the objectives and the minimum undesirable side-effects.

The adaptation to unfavourable change may be forced upon a country, the response may be "too little and too late", and therefore its social costs may be very high, or it may be anticipated and planned for, and therefore its costs minimized.

Change may be small and slow or large and sudden. For slow and gradual change, the price mechanism can be an effective instrument of adaptation. It combines a decentralized system of signals and incentives, to buyers and sellers, for the redeployment of resources in response to changes in demand and supply. Even then the growing importance of transnational corporations and of national governments limits the scope for the benign working of market forces. The growing volume of intra-firm transactions and transactions subject to government fiat is removed from the discipline of the market place.

For a large and sudden change, the price mechanism is less suited and has often to be supplemented by other measures. Some authors may even wish to define "structural" as those changes that cannot be accommodated through market forces. It may be useful to list possible meanings of "structural" change.

1. A large, drastic, and sudden change contrasted with "marginal" change. (This meaning may clash with the meaning 2 of a permanent though slow change.) An illustration would be destruction through war;
2. a permanent, compared with temporary or cyclical change;
3. change relating to real resources, such as capital or skill accumulation, technology, or tastes, compared with monetary change or policy change;
4. change in the fundamental conditions (parameters), ordinarily assumed unchanged, constant and given, for purposes of analysis, compared with change in dependent and independent variables;
5. change in the organization of markets ("market structure"), e.g. from competition to cartels or from arm's length transactions to intra-firm trade;
6. change in the distribution of economic power, either because some agents use the existing rules differently or because new rules are laid down, new pocesses followed, or new institutions set up;
7. change in the sectoral, geographical, occupational or product composition of production and trade.

To illustrate the limits of the price mechanism and market forces as instruments to bring about adjustments to large and sudden changes, consider the rise in oil prices. A sudden and very large rise in price would have the following consequences:

1. It would not discourage demand by much in the short run, given the low short-term price elasticity of demand for oil.
2. It would have repercussions on other prices, raising the general price level and contributing to cost-push inflation, thereby offsetting to some extent the impact on incentives of the rise in the "real" price of oil.
3. It would reduce the resources available to explore and invest in alternative energy sources (except for the sellers of oil who, however, may lack the incentive) and, while raising the incentive, would reduce the means to speed up the transition to the post-oil economy.
4. It would have detrimental effects on income distribution, hitting some of the poorest groups in the poorest countries, who depend upon kerosene, oil for irrigation pumps, fertilizers (20% of fertilizer cost is oil) and other products into which oil enters as an input.
5. If the consequent inflation were to be fought by monetary (or fiscal) measures of contraction, production and employment would be unnecessarily reduced by a multiple of the contraction that would have been necessary in order to economize in oil. And the means and incentive to search for substitutes would be further reduced.

A similar analysis could be conducted for changes in exchange rates in response to growing balance of payments deficits. The balance of payments of a developing country both reflects attempts of domestic adjustments and imposes the need for domestic adjustments to changes in the rest of the world. Thus, a change-over to an export-oriented strategy, an attempt to grow more food at home, a land reform, a tax reform or a redistribution of income, may lead to a temporary balance of payments deficit. On the other hand, global inflation, a fall in demand for a country's exports or policy changes in foreign countries may cause a deficit, to which the developing country must adjust. It is now widely agreed that the use of exchange rates to equilibrate payments at each moment ("clean floating") is not acceptable and would inflict unnecessary damage, even if effective. There is also growing disillusionment with "dirty floating", and a general desire to return to a regime of more stable exchange rates.

The major changes to which adjustments by the developing countries are called for are:

1. Oil price changes, both up and down, and the accompanying changes in international financial flows;
2. the possibility of growing scarcities of foodgrains;
3. high, though falling, levels of inflation in the world;
4. slower growth in the OECD countries;
5. relocation of industries in accordance with changing comparative advantage, especially the revolution in microelectronics;
6. changing composition of financial terms, such as less aid, more bank loans.

In addition, there are other changes calling for adjustments, such as:

7. continuing high rates of population growth;
8. urbanization;
9. scarcities of certain raw materials;
10. policies adopted by the developed countries: protection of industry, agriculture and services;
11. environmental pollution;
12. international migration;
13. debt service, aggravated by lower rates of inflation while nominal interest rates remain high;

14. the arms race.

It is of the essence of interdependence that a single nation state is, by unilateral action, capable of inflicting considerable harm on other countries, and that the motivation for doing so is often entirely rational from the national point of view. The main danger here arises from beggar-my-neighbor protectionist employment policies, often disguised as regional or industrial policies, even policies that go under the name of "adjustment assistance" but that truly amount to adjustment resistance. Such measures affect most directly the NICs, in search of markets for their exports. But the low-income countries, also, can be harmed by them.

Exchange rate flexibility on the part of developed countries has trade-reducing effects on developing countries, and if they peg their rates to one major trading country, trade-diverting effects from the rest of the world. Both represent costs for countries attempting to raise and diversify their trade.

The analysis of the adjustment process should be conducted in three stages.

1. How severe is the adjustment problem, as registered, in the first instance, in the balance of payments deficit? (A secondary calculation would be the costs imposed by the best corrective measure.)
2. What range of medicines are available? E.g. pegging exchange rates reduces the cupboard by one medicine; forswearing increases in tariffs by another. The greater the degree of integration of the world economy, the barer will be the national maedicine cupboard.
3. How effective is any given medicine? E.g. with a more slowly growing volume of trade, demand elasticities will be lower and exchange rate

adjustments less effective. On the other hand, in wider and larger trading areas one would expect demand elasticities to be higher than under more protective national regimes, and trade therefore more responsive to small changes in the exchange rate.

The task is to combine financing and correcting deficits in such a way as to minimize reductions in employment, output and growth (and any other objectives such as income distribution). Appropriate methods of financing deficits (the right type of conditionality) do not frustrate the process of adjustment, but facilitate it, and can reduce its cost.

The Imperatives of Industrialization

The four principal imperatives for industrialization policy are:

(1) the urgency to reduce poverty;

(2) the need to diversify the economy;

(3) the need to create jobs;

(4) the need to generate foreign exchange to service the foreign debt and to pay for imports.

1. The urgency to reduce poverty, one of the most basic objectives, was discussed above and it was argued that an anti-poverty focus in industrializaton policy not only removes many criticisms but also renders many apparently disparate issues more tractable.

2. Diversification is necessary for two reasons. First, it reduces dependency on a few products and a few markets and therefore leads to greater self-reliance, an important objective of development policy. The best way to reduce dependency is not national self-sufficiency but a diversified structure of production and foreign trade. Secondly, diversification is the best way to hedge against an uncertain future. The world economic environment is changing

rapidly. Today's comparative advantage may be tomorrow's comparative disadvantage. If it were possible to forecast the future precisely, provisions could be made for the industrial structure required in the future, with the lowest costs for the predicted outputs. Clearly, it is not. Diversification, even at somewhat higher costs in certain lines that turn out to be underutilised, or for certain amounts that turn out to be wrongly predicted, is the best response to an uncertain future.

3. Job creation has high priority because the total labour force is growing rapidly. The need to find jobs is made more urgent by the changing age distribution, with a higher ratio of the population in the years of earning, as birth rates decline, and by the growing female participation rate in the labour force.

Two arguments on employment policy are often heard, which defeat each other. On the one hand, it is said that for a developing country in which, say, 20 per cent of the labour force are in industry and 80 per cent in agriculture and services, and with a labour force growing to 3 per cent per year, to absorb only the additional entrants into the labour force (without reducing already existing unemployment) in industry would call for an absorption rate in industry of 15 per cent per year. Nowhere has industry shown a capacity to create jobs at that rate. Therefore, it is concluded, agriculture and services must provide the extra jobs. On the other hand, it is argued that agriculture and services already suffer from large excess population and gross underemployment, and it is therefore for industry to create the jobs that the primary and tertiary sectors cannot provide.

In fact, an employment strategy should be guided by the optimum efficient employment linkages between the sectors, so that jobs in industry create and support jobs in agriculture and services, and vice versa. The task is not only to create jobs now, but also to accumulate the surpluses that will provide jobs in the future, for a growing labour force. The efficient use of labour is important for two reasons. First, it is necessary in order to avoid wasting other complementary factors of production, such as capital and management, in the present; secondly, it is necessary in order to accumulate the equipment and the wage goods for employment creation in the future. If the pressure for employment creation now leads to overmanning in industry and a reduced surplus for reinvestment because of a swollen wage bill, fewer jobs will be available in the future than would have been, had the surplus been used to produce additional machines and wage goods.

4. Industrialization is necessary in order to produce the manufactured exports that earn foreign exchange. Many industrializing countries are heavily in debt and if they are not to default need the foreign exchange to service this debt. With world inflation abating and interest rates remaining high, the real burden of the debt cannot be expected to be eroded as it has been in the past. Foreign exchange is also needed for inputs into the industrial sector, both capital goods and maintenance imports. The likely foreign exchange earnings from primary exports are limited, both because of the world recession and, were demand to pick up, because of the long time it takes to expand capacity. In industry, on the other hand, excess capacity can be mobilized and additions to capacity take less long, so that industrialization is an obvious response to the need for foreign exchange.

Industrialization and international adjustments

Of special interest is the relocation of industries resulting from changes in comparative advantage. More specifically, the impact of the microelectronics revolution (and other technical changes) on the international division of labour, and the contribution of TNCs to the adjustments called for by continued technical change, deserve some attention.

Although fears are often expressed that the microelectronics revolution will reduce the comparative advantage of developing countries in labour-intensive activities, and although this is already happening in some sectors such as semiconductors and garments, there is also reason to believe that the new technology, by saving on specialized skills, will have a beneficial impact on the comparative advantage of developing countries. In addition, the rapidly expanding developing countries may find it easier to introduce the new systems technology that calls for human and institutional adaptation, than the more conservative and more slowly growing advanced countries. Which of these two counteracting forces will predominate is still difficult to predict, but it is likely that the impact will be quite different for different developing countries.

The high rate of growth of exports of manufactures until 1979, which was particularly noteworthy in the middle income oil-importing countries, was to some extent attributable to the growth of intra-firm trade in intermediate and finished goods among affiliates of related TNCs, and between parent companies and their affiliates, as well as to subcontracting arrangements. In addition, exports of machinery and equipment from the developed market economies often take place under turnkey contracts and other kinds of non-equity arrangements involving TNCs and the developing countries -- especially the oil exporters -- as well as the centrally planned economies. East-West trade in manufactured products has also grown rapidly as a result of co-production agreements and counter-trade arrangements involving the TNCs and the centrally planned economies.

Existing modes of thinking and analysis have not yet absorbed this rapid growth in intra-firm trade and the new types of arrangements, which have important implications for the distribution of the gains from trade, for the efficient allocation of world resources, and for the relationships between sovereign countries and TNCs.

The professional consensus among economists is that the liberal trading order established after the last war should be preserved, and that exports should be encouraged, not only because they yield foreign exchange, but also because they are the key to domestic growth, employment and poverty eradication. There is no doubt that some developing countries that have strongly promoted exports have done very well in achieving high growth rates with high degrees of equity and employment, and that countries that have promoted import substitution have grown more slowly, have often suffered from large unemployment and dualism, have been less able to withstand and adjust to the oil price shocks, and have in the end not saved foreign exchange.

It is common to advance a two-pronged argument. First, it is said that the key to the successful growth performance of a country such as the Republic of Korea has been the growth of exports, and, second, the instrument to achieving this good export performance has been the free market and the abstention from governmentinterventions. Both prongs are doubtful as historical analysis or as policy guidelines. Successful export performance has indeed been associated with high growth, but exports can be the result of growth, rather than its cause. Or there can be a third factor, such as efficient management, that is responsible for both growth and good export performance. In view of the relatively small part that exports play in the economy of many countries, it is difficult to argue that they have been a very important causal influence on economic growth, employment creation and income distribution. As Carlos Diaz Alejandro has said, exports may be regarded as the engine, the handmaiden, the brake or the offspring of growth. They may fulfill these different functions differently for different countries, and for the same country at different times.

As to the Invisible Hand guiding the successful export performance, there usually is a strong visible arm of government intervention guiding the Invisible Hand. This was certainly so in the Republic of Korea, which also had a successful policy of import substitution, as well as of export promotion, and efficient policies for the domestic sector. It is these policies together that have achieved high growth, low unemployment and poverty reduction. It is, however, true that government intervention is often done better by using prices as instruments of policy, including subsidies and indirect taxes, rather than quantitative restrictions, licences and rationing.

No doubt, non-discrimination between production for domestic use and foreign trade is the correct canon. But since investments take time to mature, policy makers have to anticipate the terms of trade some years hence, and have to make assumptions as to what rival countries are likely to do. There is no certainty that the nineteen-eighties will be like the 'seventies, that export opportunities will be buoyant, that all developing countries together can do what a few have achieved, and that neither protective barriers will be erected against successful exporters, nor their terms of trade deteriorate. It is true that small countries face higher elasticities of demand for their exports than large countries. But, as Carlos Diaz Alejandro has pointed out, in a recession or stagnant world economy, every country becomes a large country. Foreign trade planning, whether by private entrepreneurs or state planners, is a difficult matter and the canons of liberal trade policy are of limited value. Perhaps a useful guideline is to suggest that the costs of being wrong should be compared for different strategies. Would the country suffer more from having gone in for high-cost import substitution that turns out to be wrong in the sense that had foreign exchange be available the same products could have been more cheaply imported (over a specified time horizon, so as to meet the infant industry argument) than from having gone in for export promotion that turns out to be a failure, either because the terms of trade deteriorate more rapidly than costs for import substitutes rise, or because exclusion from markets through protection creates excess capacity? Alternatively, is it possible to put up industries and processes that are more costly for any given distribution between exports and import substitutes, but show lower costs if the actual outturn deviates from the expected, because they are flexible and adaptable from one to the other?

Planning industrial adjustment in an uncertain world involves decisions both at the macroeconomic level and at the industry and firm level. Some kind of guess must first be made about the probable shifts in the world economic environment. Next, an assessment is necessary as to the industrial structure appropriate for the alternative world economic environments. Next, some decision is necessary as to the techniques available for decision-making under uncertainty.

There are, of course, other methods of planning for an uncertain future, the costs and benefits of which have to be compared with those of flexibility. It would be possible to build industrial excess capacity or to hold inventories against unexpected price increases of imports, or foreign exchange reserves or access to lines of credit against unexpected changes in the balance of payments.

Adjustments to changes in international comparative advantage are clearly much easier in a fully employed and rapidly growing world economy than in a stagnant economy with large-scale unemployment. First, changes in industrial employment can be brought about by relative adjustments. Normal attrition through retirement and death often looks after the whole or a large part of the adjustment, so that only new workers have to be steered into the growing industries. In a stagnant economy with unemployment, there is actual loss of jobs and the need for retraining and relocation. Second, the incentives to move are much weaker in a stagnant economy. If there is unemployment in all sectors and occupations, the signals as to where to move fail. Third, workers' and trade unions' incentives to accept productivity-raising, labour-displacing innovations are much stronger in an expanding economy where everyone can find a job, than in one where their acceptance can spell added unemployment. A primary condition for progressive expansion and readjustment is therefore the return to higher rates of growth and fuller levels of employment.

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HIGH-LEVEL EXPERT GROUP MEETINGS PREPARATORY TO THE FOURTH GENERAL CONFERENCE OF UNIDO

Industrial Development Strategies and Policies for Developing Countries

Lima, Peru, 18–22 April 1983

SELECTED STATISTICAL INDICATORS

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FOREWORD

As part of the preparatory activities for the Fourth General Conference of UNIDO (UNIDO IV), a high-level expert group meeting on industrial strategies and policies for developing countries is being organized in Lima, Peru, 18-22 April 1983. This paper forms part of the preparatory documentation.

This particular meeting is considered to be of crucial importance to the preparations of UNIDO IV, since it has as its objective the review of strategies and policies of the past as well as the identification of key elements in industrial strategies and policies for the 1980s as perceived by national policy makers. On this basis, the meeting will identify those issues on which further detailed work in the strategies and policies area should proceed in preparation for UNIDO IV.

Selected Statistical Indicators focuses on the growth rate and structure of manufacturing value added by country grouping. It is not intended to be an exhaustive statistical investigation, but rather to provide selected indicators that will serve as a statistical aid and provide a quantitative basis for deliberations at the meeting.

The statistics were derived from the UNIDO data base. Supplementary sources of information include the Statistical Office and the Office of Development Research and Policy Analysis of the United Nations Secretariat, the regional commissions, the World Bank and the International Monetary Fund. The paper was prepared by the Statistics and Survey Unit, Division for Industrial Studies, UNIDO.

EXPLANATORY NOTES

The following classification of economic groupings is used in the text and in most tables, in conformity with the classification adopted by the United Nations Statistical Office: "Developing countries" includes the Caribbean area, Central and South America, Africa (other than South Africa), West Asia (other than Israel) and South and East Asia (other than Japan). "Developed market economies" includes North America (Canada and the United States of America), Europe (other than Eastern Europe), Australia, Israel, Japan, New Zealand and South Africa. "Centrally planned economies" includes Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania and the Union of Soviet Socialist Republics. Unless otherwise specified, "world" excludes Albania, China, the Democratic People's Republic of Korea, Mongolia and Viet Nam.

Countries are generally arranged in the order adopted in the Statistical Yearbook. Inclusion of a particular country or area in, or its exclusion from, any economic or geographical grouping has been dictated by considerations of the availability of comparable data in statistics of the United Nations and other international agencies.

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The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Where the designation country or region appears in the heading of tables, it covers countries, territories, cities or areas.

The designation "developed" and "developing" economies is intended for statistical convenience and does not necessarily express a judgement about the stage reached by a particular country or area in the development process.

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TABLE 1. SHARE OF MANUFACTURING VALUE ADDED IN GROSS DOMESTIC PRODUCT BY ECONOMIC GROUPING AND FOR DEVELOPING REGIONS, AT CONSTANT (1975) PRICES, SELECTED YEARS
(Percentage)

Year	All developing countries	Of which: least developed countries	Centrally planned economies	Developed market economies	Developing regions:			
					Africa	West Asia	South and East Asia	Latin America
1963	14.95	6.03	35.43	26.62	7.77	8.79	12.75	21.41
1970	16.78	8.25	41.05	28.19	8.61	10.45	14.00	24.22
1973	18.05	9.27	43.54	29.19	9.21	10.36	15.22	26.03
1975	18.23	8.93	47.25	27.50	9.62	10.42	15.65	25.81
1978	18.86	8.58	48.88	28.52	9.35	10.98	18.23	25.78
1979	19.07	8.56	49.70	28.68	9.55	10.25	19.10	25.95
1980	19.15	8.37	49.84	27.47	9.67	10.25	18.94	25.98

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis and the Statistical Office of the United Nations, with estimates by the UNIDO secretariat.

TABLE 2. SHARE OF MANUFACTURING VALUE ADDED IN GROSS DOMESTIC PRODUCT FOR THE TEN DEVELOPING COUNTRIES WITH THE LARGEST MANUFACTURING VALUE ADDED[a], AT CURRENT PRICES, SELECTED YEARS

(Percentage)

	1963		1973		1980	
Rank	Country	Share	Country	Share	Country	Share
1	Brazil	26.4	Brazil	28.2	Brazil	26.6
2	India	15.7	Argentina	29.0	Argentina	32.6
3	Argentina	27.5	Mexico	22.8	Mexico	24.6
4	Mexico	19.2	India	14.1	India	17.8
5	Venezuela	13.1	Chile	26.1	Rep. of Korea	29.3
6	Turkey	16.6	Turkey	20.0	Iran	19.2
7	Chile	24.6	Iran	13.0	Turkey	20.1
8	Philippines	22.3	Rep. of Korea	25.0	Philippines	25.6
9	Colombia	20.8	Venezuela	17.8	Venezuela	13.9
10	Egypt	22.1	Peru	26.0	Colombia	22.6

a/ Countries are ranked according to their manufacturing value added, in U.S. dollars, in the year indicated.

Source: UNIDO data base; information supplied by the United Nations Office of Development Research and Policy Analysis.

TABLE 3. SHARE OF ECONOMIC GROUPINGS IN WORLD MANUFACTURING VALUE ADDED[a], SELECTED YEARS, 1938 to 1982

(Percentage)

	1938	1948	1953	1963	1970	1973	1975	1978	1980	1982[b]
Developed market economies	61.0	72.2	72.0	77.3	73.4	72.0	67.5	66.8	65.2	64.0
Centrally planned economies	34.5	22.1	23.2	14.6	17.8	18.7	22.5	22.9	23.8	25.0
Developing countries	4.5	5.7	4.8	8.1	8.8	9.3	10.0	10.3	11.0	11.0

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis and the Statistical Office of the United Nations; and *Monthly Bulletin of Statistics*, Vol.XXXVI, No.11 (November 1982), with estimates by the UNIDO secretariat.

[a] Data for the years 1938-1953 are in current prices. Figures for 1938-1953 were derived from data compiled according to industrial census concepts. Figures for the years 1963-1980 were compiled from national accounts sources for manufacturing value added expressed in US dollars at 1975 prices.

[b] Estimate.

TABLE 4. THE TEN DEVELOPING COUNTRIES WITH THE LARGEST MANUFACTURING VALUE ADDED[a] AND THEIR SHARE IN THE MANUFACTURING VALUE ADDED OF ALL DEVELOPING COUNTRIES, AT CURRENT PRICES, 1980

(Percentage)

Country	Share
Brazil	18.67
Argentina	12.42
Mexico	12.25
India	8.42
Rep. of Korea	5.14
Iran	4.62
Turkey	3.43
Philippines	2.68
Venezuela	2.46
Colombia	2.19

[a] Measured in U.S. dollars

Source: UNIDO data base; information supplied by the United Nations Office of Development Research and Policy Analysis.

TABLE 5. GROWTH[a] OF MANUFACTURING VALUE ADDED, BY ECONOMIC GROUPING AND FOR DEVELOPING REGIONS, AT CONSTANT (1975) PRICES, SELECTED PERIODS

(Percentage)

	1963-1973	1973-1980	1973-1982
Developing countries	8.0	5.8	4.7
Least developed countries	5.8	3.0	...
Africa	7.2	5.6	...
West Asia	9.4	6.3	...
South and East Asia	7.6	8.5	...
Latin America	8.1	4.4	...
Centrally planned economies	9.8	6.6	5.4
Developed market economies	5.5	2.4	1.7

[a] Calculated from annual data using a semi-log regression on time.

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis and the Statistical Office of the United Nations, supplemented by the Monthly Bulletin of Statistics, vol.XXXVI, no.11 (November 1982), with estimates by the UNIDO secretariat.

TABLE 6. CONTRIBUTION OF LEAST DEVELOPED COUNTRIES AND DEVELOPING REGIONS TO THE MANUFACTURING VALUE ADDED OF ALL DEVELOPING COUNTRIES, AT CONSTANT (1975) PRICES, SELECTED YEARS

(Percentage)

Year	Least developed countries	Developing regions: Africa	West Asia	South and East Asia	Latin America
1963	2.18	9.56	6.00	26.26	58.18
1970	2.07	9.53	6.73	24.94	58.79
1973	1.87	8.84	6.73	25.14	59.29
1975	1.81	8.80	6.70	25.97	58.52
1978	1.65	8.47	7.11	29.55	54.87
1979	1.59	8.60	6.90	29.95	54.56
1980	1.57	8.82	6.64	28.59	55.95
1981[a]	...	9.45	6.97	30.00	53.58
1982[b]	...	10.05	7.23	31.14	51.58

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis and the United Nations Statistical Office, supplemented by the Monthly Bulletin of Statistics, vol.XXXVI, no.11 (November 1982), with estimates by the UNIDO secretariat.

a/ Preliminary figures.

b/ Estimates.

TABLE 7. GROWTH OF MANUFACTURING VALUE ADDED PER CAPITA, BY ECONOMIC GROUPING AND FOR DEVELOPING REGIONS, AT CONSTANT (1975) PRICES, 1963-1982.

(Percentage)

Year ending	All developing countries	Of which: least developed countries	Centrally planned economies	Developed market economies	Developing regions: Africa	West Asia	South and East Asia	Latin America
1964	7.3	4.3	4.0	6.8	6.7	5.8	4.3	8.5
1965	3.8	5.7	10.4	5.2	5.1	7.1	2.4	3.7
1966	3.2	10.6	7.1	5.6	3.1	7.4	-0.2	4.1
1967	1.7	5.0	10.6	1.6	-2.2	6.0	3.6	0.9
1968	6.8	4.2	9.6	6.4	7.8	9.3	6.9	6.2
1969	6.9	4.2	10.8	6.4	7.2	7.3	8.0	6.2
1970	5.9	-4.1	8.0	1.4	7.8	3.3	5.7	5.8
1971	5.5	-4.9	7.5	1.9	2.5	5.1	3.9	6.5
1972	6.0	-0.2	8.2	5.9	1.1	5.3	7.2	6.2
1973	7.4	15.0	7.5	7.8	7.0	7.7	9.1	6.6
1974	2.8	1.4	9.8	-2.1	-0.6	-0.8	3.7	3.2
1975	0.7	-1.3	8.5	-5.1	3.1	3.4	3.4	-1.2
1976	5.2	0.8	6.0	7.7	-0.4	7.4	11.3	2.9
1977	3.0	3.8	6.4	4.0	3.6	4.6	6.8	0.8
1978	3.6	-2.4	4.2	2.3	3.7	5.2	7.9	1.2
1979	3.9	-0.2	3.2	3.2	5.1	0.6	5.4	3.2
1980	0.5	-1.2	2.2	-3.6	2.7	-3.5	-3.9	2.9
1981a/	-2.7	...	0.9	-0.5	3.7	2.4	2.4	-7.2
1982b/	-2.2	...	1.6	-3.9	3.4	1.7	1.7	-6.2
Average: 1963-1973	5.2	3.1	8.8	4.5	4.4	6.4	5.0	5.2
1973-1982	2.1	0.2c/	4.6	1.0	2.9	2.6	4.7	0.4

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis and the Statistical Office of the United Nations, supplemented by the Monthly Bulletin of Statistics, vol. XXXVI, no.11 (November 1982), with estimates by the UNIDO secretariat.

a/ Preliminary figures
b/ Estimates
c/ Figure refers to the period 1973-1980

TABLE 8. SHARE OF WORLD MANUFACTURING VALUE ADDED (EXCLUDING CHINA) BY ECONOMIC GROUPING, AT CONSTANT (1975) PRICES, SELECTED INDUSTRIAL BRANCHES, 1970, 1975 AND 1980.

(Percentage)

Branch	ISIC	Developing countries			Centrally planned economies			Developed market economies		
		1970	1975	1980	1970	1975	1980	1970	1975	1980
Food products	311/2	13.9	13.8	15.1	25.4	27.8	26.9	60.7	58.4	58.1
Beverages	313	12.8	14.5	18.6	21.7	23.7	23.8	65.5	61.8	57.5
Tobacco	314	27.1	29.0	30.7	14.9	15.3	16.8	58.0	54.8	52.5
Textiles	321	17.1	18.7	18.7	26.5	30.8	32.4	56.4	50.5	48.9
Footwear	324	9.3	11.3	11.1	36.8	41.4	44.3	53.9	47.4	44.6
Wood and cork products	331	9.7	11.0	12.0	19.8	23.4	22.7	70.5	65.6	65.3
Paper	341	6.6	7.7	8.2	7.2	9.6	8.7	86.2	82.8	83.1
Printing and publishing	342	6.3	6.9	6.1	5.7	7.3	6.9	88.0	85.8	86.9
Industrial chemicals	351	6.3	7.7	7.7	22.3	28.3	28.0	71.4	64.0	64.3
Other chemicals	352	14.1	17.4	18.0	6.3	8.0	7.5	79.6	74.6	74.5
Petroleum refineries	353	40.0	38.1	41.8	11.2	16.1	16.6	48.9	45.8	41.6
Miscellaneous products of petroleum and coal	354	10.3	12.9	14.6	38.7	40.7	41.5	51.0	46.4	43.9
Rubber products	355	10.8	12.7	14.2	16.4	21.0	21.6	72.7	66.2	64.2
Pottery, china and earthenware	361	11.9	12.7	13.1	27.8	35.5	40.5	60.3	51.8	46.4
Glass	362	8.2	10.5	9.9	19.0	25.9	27.9	72.8	63.7	62.2
Other non-metallic mineral products	369	8.7	10.5	12.1	31.3	36.2	34.6	60.0	53.3	53.3
Iron and steel	371	6.4	8.1	10.3	19.4	23.9	24.2	74.2	68.0	65.5
Metal products, excluding machinery	381[a]	6.0	7.0	7.3	18.7	26.6	30.4	75.3	66.4	62.4
Non-electrical machinery	382[a]	3.0	4.9	5.0	17.6	23.8	26.7	79.4	71.3	68.3
Electrical machinery	383[a]	5.1	6.2	6.6	18.5	25.3	26.3	76.4	68.5	67.2
Transport equipment	384[a]	5.5	7.5	7.5	16.9	23.1	27.3	77.6	69.4	65.2

Source: UNIDO data base; information supplied by the United Nations Statistical Office, with estimates by the UNIDO secretariat.

[a] Shares for branches within ISIC 38 may be somewhat distorted, due to variations in the national reporting practices of several important producers of fabricated metal products, machinery, and transport equipment.

TABLE 9. SHARE OF WORLD MANUFACTURING VALUE ADDED (EXCLUDING CHINA) FOR ALL DEVELOPING COUNTRIES, LEAST DEVELOPED COUNTRIES AND DEVELOPING REGIONS, AT CONSTANT (1975) PRICES, SELECTED INDUSTRIAL BRANCHES, 1970 AND 1979.

(Percentage)

Branch	ISIC	All developing countries		Of which: least developed countries		Developing regions: Africa		West Asia		South and East Asia		Latin America	
		1970	1979	1970	1979	1970	1979	1970	1979	1970	1979	1970	1979
Food products	311/2	13.92	14.73	0.70	0.44	1.89	1.72	0.56	0.73	3.43	4.03	8.04	8.25
Beverages	313	12.79	17.66	0.38	0.40	1.86	2.56	0.60	1.12	1.92	3.58	8.41	10.40
Tobacco	314	27.10	30.76	1.14	1.18	2.92	3.33	3.37	4.39	12.04	13.79	8.78	9.24
Textiles	321	17.07	18.63	0.82	0.69	2.18	2.13	1.27	1.19	5.87	7.06	7.76	8.25
Footwear	324	9.35	10.94	0.28	b/	1.46	1.67	0.45	b/	1.74	2.13	5.69	6.49
Wood and cork products	331	9.69	11.54	0.26	b/	1.29	1.32	0.41	0.42	3.50	4.73	4.49	b/
Paper	341	6.56	7.86	0.04	b/	0.66	0.75	0.26	0.31	1.34	1.84	4.31	4.96
Printing and publishing	342	6.35	6.14	0.06	b/	0.54	b/	0.12	b/	1.30	b/	4.39	3.64
Industrial chemicals	351	6.32	7.45	0.05	b/	0.40	0.35	0.42	0.74	1.49	2.22	4.01	4.15
Other chemicals	352	14.11	17.56	0.18	0.19	0.98	1.32	0.44	0.62	3.37	3.96	9.32	11.65
Petroleum refineries	353	39.97	39.74	0.22	0.10	1.11	1.89	11.66	10.67	11.74	11.89	15.46	15.28
Miscellaneous products of petroleum and coal	354	10.25	14.12	-	-	1.50	b/	1.06	1.02	2.51	4.50	5.19	6.29
Rubber products	355	10.83	13.22	0.03	b/	0.94	b/	0.39	0.27	2.82	4.03	6.67	7.85
Pottery, china and earthenware	361	11.95	13.00	b/	b/	0.53	b/	0.81	b/	2.23	2.19	8.39	9.53
Glass	362	8.19	10.02	0.13	b/	0.52	b/	0.54	0.62	2.01	b/	5.11	5.86
Other non-metallic mineral products	369	8.67	11.58	0.14	0.12	0.91	0.92	0.48	0.79	2.28	3.48	5.00	6.38
Iron and steel	371	6.38	9.54	0.05	0.06	0.37	0.40	0.49	0.60	1.28	2.06	4.24	6.48
Metal products, excluding machinery	381a/	5.96	7.07	0.08	b/	0.57	0.61	0.35	b/	1.21	1.50	3.83	4.67
Non-electrical machinery	382a/	2.97	4.83	0.01	b/	0.10	0.12	0.10	0.20	0.70	0.98	2.07	3.53
Electrical machinery	383a/	5.08	6.65	0.01	b/	0.22	0.27	0.12	0.19	1.25	2.34	3.50	3.85
Transport equipment	384a/	5.51	7.18	0.02	b/	0.25	0.36	0.10	0.22	1.03	1.33	4.13	5.26

Source: UNIDO data base; information supplied by the United Nations Statistical Office, with estimates by the UNIDO secretariat.

a/ Shares for branches within ISIC 38 may be somewhat distorted, due to variations in the national reporting practices of several important producers of fabricated metal products, machinery, and transport equipment.

b/ Figures are not shown separately because the underlying data from which they would have been derived do not meet minimum standards of quality.

TABLE 10. STRUCTURE OF NET MANUFACTURING OUTPUT, BY ECONOMIC GROUPING, AT CONSTANT (1975) PRICES, 1963, 1973 AND 1979
(Percentage)

Branch	ISIC	Developing countries[a/]			Centrally planned economies			Developed market economies		
		1963	1973	1979	1963	1973	1979	1963	1973	1979
Food products	311/2	17.7	13.7	13.1	15.3	11.9	9.7	10.1	8.3	8.5
Beverages	313	3.1	2.7	3.3	2.7	2.0	2.0	2.1	1.9	1.9
Tobacco	314	3.4	2.4	2.3	1.0	0.7	0.6	1.0	0.7	0.7
Textiles	321	13.4	10.1	8.8	8.8	7.0	6.0	5.4	4.5	3.9
Wearing apparel	322	3.4	2.5	2.3	5.4	4.6	4.3	3.6	2.9	2.6
Leather and fur products	323	0.8	0.5	0.5	1.0	0.7	0.6	0.6	0.4	0.4
Footwear	324	1.3	0.9	0.8	2.1	1.5	1.4	1.0	0.6	0.6
Wood and cork products	331	2.5	2.1	2.0	2.7	1.9	1.5	2.4	2.2	1.9
Furniture and fixtures excluding metal	332	1.3	1.1	0.9	1.4	1.4	1.4	1.9	2.0	2.0
Paper	341	2.3	2.4	2.3	1.2	1.1	0.9	3.9	3.8	3.8
Printing and publishing	342	2.8	2.4	1.9	1.0	1.0	0.8	5.1	4.3	4.3
Industrial chemicals	351	2.4	3.9	4.2	3.8	5.4	5.7	3.4	5.2	5.7
Other chemicals	352	4.8	5.9	6.5	0.9	1.1	1.1	3.3	3.8	4.4
Petroleum refineries	353	10.7	10.5	8.9	0.9	1.4	1.4	1.5	1.7	1.6
Miscellaneous products of petroleum and coal	354	0.3	0.5	0.5	1.2	0.8	0.7	0.4	0.3	0.3
Rubber products	355	1.6	1.9	1.9	1.1	1.2	1.1	1.4	1.5	1.4
Plastic products	356	0.8	1.4	1.3	0.3	0.7	0.8	0.9	2.0	2.4
Pottery, china and earthenware	361	0.7	0.7	0.7	0.8	0.8	0.8	0.5	0.5	0.4
Glass	362	0.7	1.0	1.0	0.7	0.9	1.0	0.9	0.9	1.0
Other non-metallic mineral products	369	3.0	3.4	3.9	5.3	5.1	4.3	3.2	3.0	2.8
Iron and steel	371	4.3	4.9	5.6	7.5	5.8	4.9	6.9	6.7	5.8
Non-ferrous metals	372	1.8	1.9	2.0	2.4	2.8	2.6	1.8	1.8	1.7
Metal products, excluding machinery	381	4.0	4.5	5.0	30.6	37.6	43.6	7.2	7.2	7.0
Non-electrical machinery	382	2.7	5.4	5.4				10.6	11.1	11.4
Electrical machinery	383	2.9	4.4	6.0				6.7	8.6	9.3
Transport equipment	384	5.0	7.2	7.2				10.4	10.4	10.3
Professional and scientific equipment, photographic and optical goods	385	0.3	0.4	0.4				1.8	1.9	2.3
Other manufactures	390	1.8	1.4	1.3	2.0	2.7	2.9	1.9	1.7	1.7
Total manufacturing	300	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: UNIDO data base; information supplied by the Statistical Office of the United Nations, with estimates by the UNIDO secretariat.

a/ The data for 1963 cover 59 countries which, in 1975, accounted for 95 per cent of the manufacturing value added of all developing countries; the data for 1973 and 1979 cover 50 countries which, in 1975, accounted for 88 per cent of the manufacturing value added of all developing countries. Therefore, although the structures for all years are probably representative of developing countries as a whole, the variation in country composition should be noted.

Note: Data exlude Albania, China, Iceland, Luxembourg, Netherlands and New Zealand.

TABLE 11. GROWTH OF MANUFACTURING VALUE ADDED BY ECONOMIC GROUPING[a/] AND BRANCH, AT CONSTANT (1975) PRICES, 1963-73 AND 1973-79.

(Percentage)

Branch	ISIC	Developing countries		Centrally planned economies		Developed market economies	
		1963-73	1973-79	1963-73	1973-79	1963-73	1973-79
Food products	311/2	4.7	4.8	6.0	3.4	3.7	2.8
Beverages	313	6.0	9.3	5.4	6.1	5.1	2.6
Tobacco	314	4.3	4.5	4.2	3.9	2.4	1.7
Textiles	321	4.3	3.2	6.2	4.5	3.9	-0.1
Wearing apparel	322	3.5	3.0	8.2	5.5	2.8	1.4
Leather and fur products	323	2.0	5.1	5.2	4.1	1.4	1.6
Footwear	324	3.6	3.0	5.6	4.8	0.8	0.5
Wood and cork products	331	5.8	5.7	5.0	3.3	4.1	0.7
Furniture and fixtures, excluding metal	332	b/	b/	8.5	7.2	6.1	1.9
Paper	341	7.0	4.3	7.7	4.7	5.5	1.8
Printing and publishing	342	5.5	1.1	8.4	4.7	3.8	2.5
Industrial chemicals	351	11.7	6.9	12.2	8.2	10.1	3.8
Other chemicals	352	9.1	7.0	10.9	6.7	7.4	5.1
Petroleum refineries	353	5.9	3.0	13.4	7.3	7.4	0.9
Miscellaneous products of petroleum and coal	354	14.7	4.5	3.2	4.2	1.0	0.7
Rubber products	355	7.8	5.4	8.7	6.0	5.6	2.2
Plastic products	356	b/	b/	16.9	10.5	15.1	5.9
Pottery, china and earthenware	361	5.3	4.5	8.9	7.8	4.4	1.0
Glass	362	8.1	6.0	10.6	9.5	5.9	3.6
Other non-metallic mineral products	369	8.7	7.6	8.2	4.0	4.3	1.6
Iron and steel	371	7.8	7.3	5.6	4.0	4.7	-0.5
Non-ferrous metals	372	5.8	7.3	9.8	6.0	5.5	1.7
Metal products, excluding machinery	381	7.8	6.9	10.9	9.7	5.4	2.1
Non-electrical machinery	382	12.5	5.3			5.9	2.1
Electrical machinery	383	11.4	10.6			8.3	3.6
Transport equipment	384	9.6	4.7			5.4	2.7
Professional and scientific equipment, photographic and optical goods	385	b/	b/			6.3	4.9
Other manufactures	390	b/	b/	11.2	9.2	4.3	2.0

Source: UNIDO data base; information supplied by the Statistical Office of the United Nations, with estimates by the UNIDO secretariat.

a/ Excluding China

b/ Figures are not shown separately, because the underlying data from which they have been derived do not meet minimum standards of quality.

TABLE 12. INDEX NUMBERS OF INDUSTRIAL PRODUCTION IN MANUFACTURING (1975=100), FOR SELECTED COUNTRIES, 1963-1980

Year	Developing countries of South and East Asia						Developing countries of Latin America			Developed market economies				
	Hong Kong	Indonesia	Malaysia	Philippines	Singapore	Thailand	Argentina	Brazil	Mexico	Federal Republic of Germany	France	Japan	United Kingdom	United States
1963	33	37	33	49	22	27	44	34	38	61	52	37	73	73
1964	36	37	37	49	23	32	53	36	45	66	55	42	80	78
1965	41	36	42	52	26	34	61	35	49	72	58	42	82	84
1966	47	37	48	55	29	38	61	40	54	73	63	47	83	91
1967	51	38	52	60	35	43	62	40	57	71	65	54	84	91
1968	60	41	56	63	41	46	66	46	63	79	70	62	91	96
1969	70	47	62	66	51	52	74	51	69	89	77	72	94	98
1970	80	52	64	72	61	56	79	58	75	94	82	81	95	92
1971	89	59	65	76	72	66	87	66	77	96	87	85	95	94
1972	100	67	72	81	84	75	92	76	83	99	93	93	97	103
1973	110	77	89	92	98	83	98	89	91	105	99	105	107	112
1974	93	89	97	96	102	91	104	95	97	105	102	103	107	105
1975	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1976	122	109	118	108	111	115	96	111	104	106	107	113	104	109
1977	127	125	131	119	120	137	101	114	107	104	110	122	104	117
1978	144	140	148	128	134	148	93	123	117	106	109	130	105	122
1979	143	152	167	134	153	163	96	131	126	107	113	141	104	126
1980	150	165	188	143	167	169	102	142	134	108	113	128	93	119
Averages: a/														
1963-1973	13.3	7.9	9.2	6.6	17.6	11.5	7.5	10.2	8.5	5.5	6.8	11.4	3.2	3.4
1973-1980	6.8	11.5	11.7	6.9	8.4	11.6	-0.3	6.8	5.6	0.6	2.0	4.6	-1.1	2.5

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis.

a/ Calculated from the annual data using a semi-log regression on time.

TABLE 13. GROWTH[a] OF LABOUR PRODUCTIVITY IN MANUFACTURING, BY ECONOMIC GROUPING AND FOR SELECTED DEVELOPING REGIONS, 1963-1973 AND 1973-1980
(Percentage)

Branch	ISIC	Developing countries		Latin America		Developing Asia		Centrally Planned Economies		Developed Market Economies	
		1963-1973	1973-1980	1963-1973	1973-1980	1963-1973	1973-1980	1963-1973	1973-1980	1963-1973	1973-1980
Food, beverages and tobacco	31	2.2	-0.9	0.5	-0.1	4.0	0.2	3.2	2.5	3.1	2.7
Textiles	321	2.0	-0.1	2.8	1.1	1.4	0.9	4.8	3.8	5.2	3.2
Wearing apparel, leather, footwear	322-324	-0.2	-2.6	1.6	-2.2	-1.4	-1.6	4.2	4.2	1.2	1.7
Wood and wood products, including furniture	33	-0.3	1.4	...	...	0.3	3.9	5.3	4.5	3.4	1.7
Paper and paper products, printing and publishing	34	4.0	-0.3	2.2	-1.8	1.6	1.8	4.7	3.3	3.6	2.4
Chemicals	35	4.4	-0.4	5.3	0.2	5.2	-0.9	6.6	5.2	6.1	3.5
Non-metallic minerals	36	2.7	1.2	3.5	1.0	3.2	2.5	4.7	3.7	4.3	3.1
Basic metals	37	1.3	1.7	3.9	0.3	-0.9	4.3	4.7	3.4	4.6	1.9
Metal products, machinery and equipment	33	4.4	2.4	5.9	2.0	1.8.	5.1	7.3	7.0	3.7	2.8
Total manufacturing		2.8	0.7	3.3	0.8	2.5	1.9	5.7	5.2	4.0	2.8
Light manufacturing		1.3	-0.2	1.4	-0.3	1.0	1.2	4.3	3.8	3.3	2.7
Heavy manufacturing		4.0	1.3	5.0	1.4	4.0	2.3	6.1	5.8	4.4	2.8

Source: Based on information supplied by the Statistical Office of the United Nations.

a/ Calculated from annual data using a semi-log regression on time.

TABLE 14. SHARE OF ECONOMIC GROUPINGS IN WORLD MANUFACTURED EXPORTS[a] AT CURRENT PRICES, 1963-1981

(Percentage)

Year	Developing countries	Centrally planned economies b/	Developed market economies
1963	4.2	13.3	82.5
1964	4.3	12.8	82.9
1965	4.4	12.3	83.3
1966	4.5	11.6	83.9
1967	4.6	11.7	83.7
1968	4.5	11.0	84.6
1969	4.9	10.4	84.7
1970	5.0	10.1	84.9
1971	5.2	9.7	85.0
1972	5.7	9.9	84.4
1973	6.7	9.5	83.9
1974	6.8	8.4	84.7
1975	6.3	9.3	84.4
1976	7.4	8.9	83.7
1977	7.7	8.9	83.4
1978	8.1	8.7	83.2
1979	8.8	8.4	82.9
1980	9.2	8,1	82.7
1981[c]	9.2	8.7	82.1

Source: UNCTAD, Handbook of International Trade Statistics, various issues; and Monthly Bulletin of Statistics, various issues, with estimates by the UNIDO secretariat.

a/ Codes 5-8 (except 68) of the Standard International Trade Classification, Revised (United Nations publication, Sales No.E.68.XVII.6) (SITC, Revised).

b/ Excluding trade among the centrally planned economies of Asia.

c/ Estimates.

TABLE 15. WORLD TRADE IN MANUFACTURES[a], BY ORIGIN, DESTINATION AND ECONOMIC GROUPING, AT CURRENT PRICES, SELECTED YEARS

		Exports to developing countries		Exports to centrally planned economies[b]		Exports to developed market economies	
Origin of exports	Year	Value (millions of dollars)	Share (percentage)	Value (millions of dollars)	Share (percentage)	Value (millions of dollars)	Share (percentage)
Developing countries	1963	1 404	41.2	102	3.0	1 902	55.8
	1970	3 413	35.4	472	4.9	5 756	59.7
	1975	11 935	37.9	1 172	3.7	18 352	58.3
	1979	28 903	35.2	1 747	2.1	51 488	62.7
	1980	38 599	38.7	2 878	2.9	58 197	58.4
Centrally planned economies [b]	1963	1 635	15.1	8 043	74.3	1 147	10.6
	1970	2 899	15.2	13 381	70.2	2 772	14.6
	1975	6 790	14.6	31 835	68.6	7 756	16.7
	1979	12 955	16.5	49 977	63.7	15 483	19.7
	1980	15 782	18.0	54 692	62.3	17 268	19.7
Developed market economies	1963	16 950	25.7	2 168	3.3	46 740	71.0
	1970	32 827	20.5	6 269	3.9	121 257	75.6
	1975	111 289	26.5	26 518	6.3	282 152	67.2
	1979	188 794	24.3	38 051	4.9	550 604	70.8
	1980	233 718	26.0	42 430	4.7	622 646	69.3

Source: See table 14.

[a] SITC codes 5-8, excluding 68

[b] Excluding trade among the centrally planned economies of Asia.

TABLE 16. BALANCE OF TRADE FOR SELECTED ECONOMIC GROUPINGS AND DEVELOPING REGIONS, AT CURRENT PRICES, SELECTED YEARS

(Millions of U.S. dollars)

	1963	1970	1973	1975	1978	1980
Least developed countries	-236.0	-473.9	-1,528.5	-3,383.2	-4,729.8	-6,612.9
Developing Africa	-792.3	341.2	497.4	-7,227.7	-15,409.7	18,716.6
OPEC members	-235.7	1,098.1	1,717.5	72.4	-2,246.2	32,417.4
Others	-556.6	-756.9	-1,220.2	-7,300.1	-13,163.6	-13,700.8
Developing West Asia	1,339.7	2,129.0	8,755.4	28,856.7	16,516.5	51,406.1
OPEC members	1,850.0	2,768.8	9,705.5	33,155.1	21,441.1	60,857.4
Others	-510.3	-639.7	-950.1	-4,298.4	-4,924.5	-9,451.2
Developing South and East Asia	-1,358.6	-1,943.2	3,182.0	-1,631.1	-6,091.5	-18,663.7
OPEC members	486.2	356.6	4,269.1	4,721.9	1,732.8	3,710.4
Others	-1,844.8	-2,299.8	-1,087.1	-6,353.0	-7,824.3	-22,374.1
Latin America	1,200.9	-1,548.6	-377.1	-11,418.2	-8,174.9	-9,529.4
OPEC members	1,765.6	453.3	1,763.2	1,920.3	-5,529.6	4,065.1
Others	-564.7	-2,001.9	-2,140.3	-13,338.5	-2,645.3	-13,594.5
All developing countries	389.6	-1,021.7	12,057.6	8,579.6	-13,159.6	41,929.6
OPEC members	3,866.1	4,676.7	17,455.4	39,869.8	15,398.1	101,050.3
Semi-industrialized countries	-1,902.4	-2,978.1	-1,308.3	-17,815.7	-9,705.8	-34,197.7
Other developing countries	-1,574.1	-2,720.2	-4,089.5	-13,474.4	-18,851.8	-24,922.9
Developed market economies	3,033.8	8,409.1	5,356.0	6,962.1	14,988.7	-73,865.3

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis.

TABLE 17. SHARE OF INVESTMENT[a] IN GROSS DOMESTIC PRODUCT FOR SELECTED ECONOMIC GROUPINGS AND DEVELOPING REGIONS AT CURRENT PRICES, SELECTED YEARS

(Percentage)

	1963	1970	1973	1975	1978	1980
Least developed countries	11.4	11.3	11.8	14.4	14.2	15.5
Developing Africa	14.5	17.5	20.9	27.1	27.7	25.5
OPEC members	15.2	19.0	26.3	33.0	35.1	28.9
Others	14.3	16.8	17.9	22.8	21.8	21.7
Developing West Asia	14.5	17.4	17.0	19.4	28.4	24.6
OPEC members	13.1	14.9	14.7	16.8	30.9	25.5
Others	15.4	19.0	19.1	23.5	24.4	22.3
Developing South and East Asia	16.7	18.5	19.2	23.4	22.9	23.6
OPEC members	9.9	15.7	18.0	25.4	18.7	17.6
Others	17.7	19.0	19.5	22.6	24.7	25.9
Latin America	20.2	22.5	22.8	26.7	26.5	26.8
OPEC members	20.2	28.6	30.3	30.2	40.2	24.9
Others	20.2	22.0	22.2	26.4	25.1	27.0
All developing countries	17.6	20.0	20.9	24.9	25.8	25.4
OPEC members	14.7	19.3	21.9	25.7	29.3	24.6
Semi-industrialized countries	19.4	21.5	22.5	26.6	26.3	27.9
Other developing countries	15.6	17.0	16.6	19.1	19.4	19.6
Developed market economies	21.7	23.0	24.6	21.2	22.8	22.6

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis.

[a] Gross capital formation

TABLE 18. NET CAPITAL INFLOWS[a] FOR SELECTED ECONOMIC GROUPINGS AND DEVELOPING REGIONS, SELECTED YEARS

(Millions of U.S. dollars)

	1963	1970	1973	1975	1978	1980
Least developed countries	-274.2	-504.4	-1,585.2	-3,266.1	-4,486.8	-6,320.3
Developing Africa	-1,430.4	-1,259.2	-2,172.5	-9,815.5	-19,196.2	11,989.7
OPEC members	-234.6	338.8	-103.7	-1,541.6	-4,493.3	28,137.7
Others	-1,195.8	-1,598.0	-2,068.8	-8,273.9	-14,702.9	-16,148.0
Developing West Asia	307.1	795.6	5,650.3	26,405.8	20,390.0	60,553.2
OPEC members	784.3	1,146.0	5,444.2	29,501.1	24,061.4	67,453.1
Others	-477.1	-350.4	206.1	-3,095.3	-3,671.4	-6,899.9
Developing South and East Asia	-4,980.8	-9,369.9	-390.2	-3,723.5	-10,322.9	-22,117.6
OPEC members	-2,888.5	-6,584.2	1,542.1	3,164.6	-2,871.8	947.8
Others	-2,092.3	-2,785.7	-1,932.4	-6,888.1	-7,451.1	-23,065.4
Latin America	-920.2	-6,060.4	-8,484.8	-16,645.5	-20,061.5	-26,957.9
OPEC members	840.5	-273.3	49.4	1,904.6	-5,898.0	4,121.9
Others	-1,760.6	-5,787.1	-8,534.2	-18,550.1	-14,163.5	-31,079.8
All developing countries	-7,024.2	-15,893.9	-5,397.2	-3,778.6	-29,190.5	23,467.4
OPEC members	-1,498.3	-5,372.7	6,932.1	33,028.8	10,798.4	100,660.5
Semi-industrialized countries	-2,891.6	-5,977.6	-5,639.3	-20,738.8	-18,261.6	-48,827.0
Other developing countries	-2,634.3	-4,543.6	-6,690.0	-16,068.7	-21,727.3	-28,366.0
Developed market economies	8,768.2	15,418.1	21,947.3	19,722.6	39,425.4	-34,409.0

Source: UNIDO data base; information supplied by the Office of Development Research and Policy Analysis.

[a] Net capital inflow financed from transfer payments, as well as foreign aid and borrowings, foreign currency reserves, etc. Includes direct foreign investment.